# Development of Guidelines for the System of Intellectual Property Management: Geographical Indication in Each Age Range

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## Abstract
This research aims to study the comparison of people's participation in each generation stage on intellectual property management: Geographical Indication (GI) and to study factors influencing participation in the management of geographical indications and recommend guidelines for the development of intellectual property management system. This research is a mixture of quantitative and qualitative research. The samples used in the study were the population from the provinces where the intellectual property was registered with at least two geographical indications in 6 regions of Thailand: Chiang Mai, Nakhon Phanom, Nonthaburi, Phetchaburi, Chonburi and Surat Thani with a total of 2,400 informants who have vastly interest in protecting GIs or 400 sampling from each province. The results showed that opinions on participation in intellectual property management: geographical indications of people at all ages are at a high level. It was found that Baby Boomers are involved in the management of intellectual property different from Generation X and Generation Y population. Generation X population and Generation Y involved in the management of intellectual property: GI is at the same level. It was also found that the management of change contributed to the participation in the management of intellectual property most and people awareness, news and information, role of leadership in the area, and knowledge of intellectual property management are also important respectively.
**Keywords**: Public Participation, Geographical Indication, Age Range

## Introduction
At present, various organizations give the importance of intellectual property management because intellectual property has been brought to the development of the country by focusing at the micro level especially in the community by strengthening the community's economy and community's enterprise development. The government and community both try to lift up the quality, standard, and selection of the community products along with promoting smallholder groups in various forms within the community. In addition, when the product of community was created or become famous, the law must provide a legal protection for the product for duplication or using a name without permission. Therefore, in order to encourage community to make product as Geographical Indication, the awareness of people in the community is necessary. Geographical Indication refers to the name or thing that indicates the venue of the product. It can convey to the consumer that the product is of a quality or distinctive feature that is different from that produced from other venues. Nowadays, the law allows the product to be registered as a product from natural resource in the community or skill and expertise of people in the community for the product. Both of these factors create unique products of the community, for this reason, the right to a geographical indication is a community right. The Geographical Indications must be registered and the protection of

geographical indications is in accordance with Geographical Indication Protection Act BE 2546 (2003), which provides for the protection of geographical indications.

At present, the government has been trying very hard to manage GI because of the benefits as community rights to the community. In addition, the registration of geographical indications also preserves the product quality and preserving local wisdom conveyed from generation to generation and generates income to the people in the community which will make the community stronger and more harmonious. As mentioned above, presently, Thailand has laws relating to the protection of geographical indications, namely the Geographical Indication Act of 2003. The products have been registered as geographical indications with a total of 71 types of goods (2017), but still less than what it should be. In addition, both public and private sector still lacked of knowledge and understanding of Geographical indications. As consequence, people have little idea of how they can manage GI and gain more benefits from GI and at the end, people start to lack of participation in the management of intellectual property in their area.

From the above problem, the research was conducted to study factors that influence the participation in intellectual property management in order to recommend guideline for promoting people's participation in intellectual property management in the area. This study aims to study the role of people in each age range in the management of Geographic Indication: Baby Boomer is between 52-70 years old, Generation X is between 37-51 years old, and Generation Y is between 19-36 years old. This is because these three age groups are playing an important role in driving the community, society, and nation with regards to the promotion of GI. At the end of this article, it will recommend a guideline to promote the role of individual in each age group in the management of intellectual property: Geographical Indication in the community.

## Research Objectives

1) To compare people's participation in each generation in the management of intellectual property: Geographical Indication

2) To study factors influencing participation in each generation in the management of intellectual property: Geographical Indication

3) To study the problem and development of guidelines for the system of Intellectual Property Management: Geographical Indication in each age range.

## Research Scope

1) Content scope: The research introduced the concept of intellectual property: Geographical Indication and studied the concepts and theories related to management and concepts of change in four contexts: Globalization, Technology, Free Trade and social change. In addition, this research also studied concept of roles in the community: leadership, concept of participation, and concept of age in order to be able study three age ranges: Baby Boomers, Generation X and Generation Y. The research was conducted on issues related to the development of guidelines for the system of Intellectual Property Management: Geographical Indication in each age range.

2) Scope of population / sample: The population used in this research in quantitative terms is Thai people. The samples (Yamane: 1973) were 400 people from each province in six regions of Thailand. The total numbers of representatives were 2,400. In each province, the research divided age range in three groups. Each age group was around 133 people from each province in six regions of Thailand. For population in qualitative research, they are people who play an important role in the management of intellectual property in the community.

3) Area boundaries: The researcher selected a specific area. The selection criteria are provinces where Geographical Indication is registered and there are at least 2 registered products in the province. The research selected 6 provinces from 6 regions, namely Chiang Mai, representing Northern Thailand; Nakhon Phanom representing Northeast, Nonthaburi represent central region, Phetchaburi represents western region, Chonburi represents east, and Surat Thani represent southern province.

## Research Framework

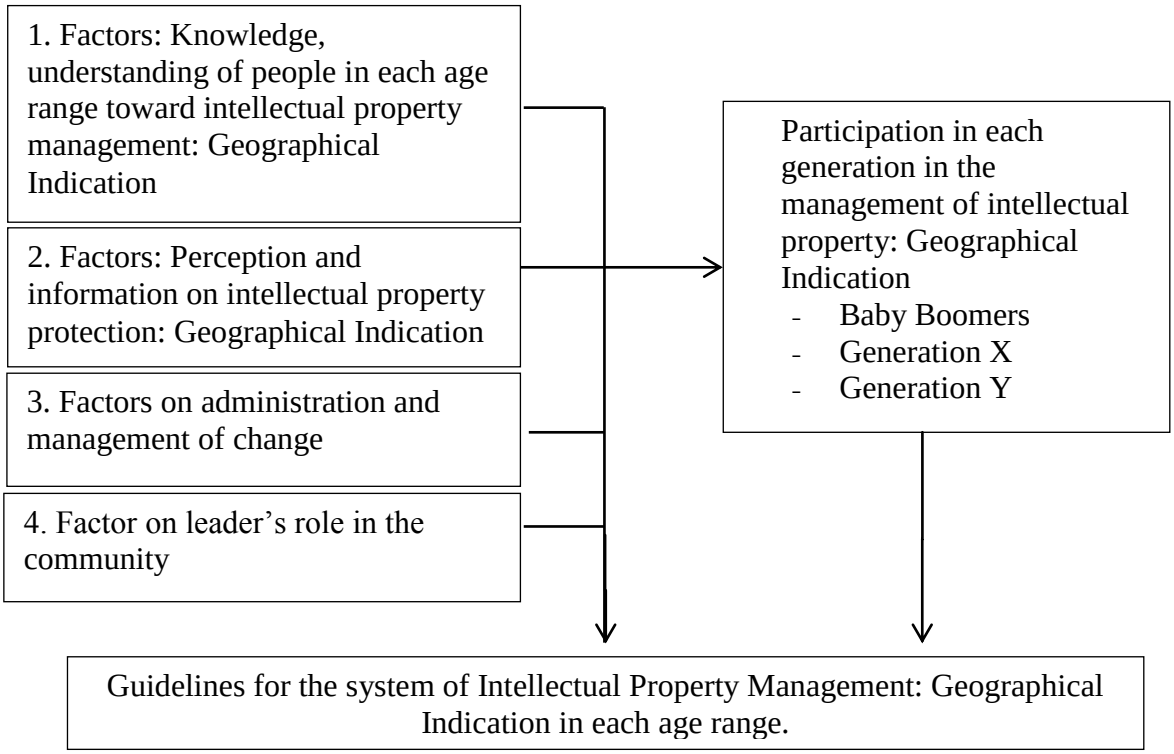


**Figure 1** Research Framework

## Research Findings

Development of Guidelines for the system of Intellectual Property Management: Geographical Indication in each age range can be seen as follows:

1) Respondent factors: The samples of 2400 respondents were female (53.50%), aged 52-70 years (34.40%), bachelor degree or equivalent (58.80%), Married status (46.00%)

2) Research Finding: a comparison of participation in Intellectual Property Management geographical indications of people in each age range.

Opinions about participating in intellectual property management: Geographic Indications of people at all ages were at a high level ($\bar{x}$ = 3.49, SD =.77). Generation Y (x = 3.63, SD =.72) and Generation X (x = 3.54, SD =.77) had opinions on participation in intellectual property management were at high level respectively. Meanwhile, Baby Boomers (x = 3.32, SD = 79) had opinions on participation was moderate. When comparing between age ranges, a research found that baby boomers had different view on the participation of the management of intellectual property different from the people of the Generation X and people in Generation Y. The involvement of Generation X and Generation Y people in intellectual property management: Geographical Indication type was not different.

3) The results of the study on the factors affecting the participation in the management of intellectual property: Geographical Indication.

Opinions related to factors influencing participation in Geographical Indication of all age ranges, the overall picture was at high level. When considering each factor, it was found that the knowledge of intellectual property management: GI average score was 6.13 points out of 10, which was at moderate level. Perception and information about IP management was at the level of high ($\bar{x} = 3.62$). The opinions of administration and management of change were at a high level ($\bar{x} = 3.63$) and the leader's role in the area was very high ($\bar{x} = 3.62$).

4) The study of factors affecting the participation in the management of intellectual property: Geographical Indication

Based on the study of factors influencing participation in intellectual property management: Geographical indications of all ages, it was found that administration and management of change (X3) affected the participation in intellectual property management most and the second rank was perception and information (X2), role of local leaders (X4), and knowledge of intellectual property management(X1) respectively:

**Table 1** Multiple Regression of Factors Influencing Participation in Intellectual Property Management: Geographical indications at all age ranges (n = 2400)

| Variable | Unstandardized Coefficients | | Beta | T | Sig. |
|---|---|---|---|---|---|
| | B | S.E. | | | |
| **(Constant)** | .097 | .054 | | 1.809 | .071 |
| $X_3$ | .523 | .023 | .473 | 22.388 | .000 |
| $X_2$ | .261 | .016 | .276 | 15.937 | .000 |
| $X_4$ | .178 | .023 | .167 | 7.792 | .000 |
| $X_1$ | -.015 | .005 | -.034 | -2.982 | .003 |

R =.843, R2 =.711, Constant =.416, r =.022 -.764, * Significant at the level: 0.05

It can be written as a relation equation as follows:

Forecast equation in raw score $\hat{Y} = 0.097 + 0.523x3 + 0.261x2 + 0.178x4-0.015x1$

Equation in standard form $\hat{Z} = 0.473x3 + 0.276x2 + 0.167x4-0.034x1$

5) The study of Factors Affecting Participation in Intellectual Property Management: Geographical Indication in each age range is as follows.

Baby Boomers found that administrating and managing of change influences their participation in intellectual property management most. Perception and information, role of leaders in the area were also important respectively. This can jointly predict participation in intellectual property management for Baby boomer age range was at 74.2%.

People in Generation X found that administrating and managing of change influenced their participation most. Perception and information, role of leaders in the area were also important respectively. This can jointly predict participation in intellectual property management for Baby boomer age range was at 71.8 %.

People in Generation X found that administrating and managing of change influenced their participation most. Perception and information, role of leaders in the area were also important respectively. This can jointly predict participation in intellectual property management for Baby boomer age range was at 65.0 %.

6) Problems and obstacles in intellectual property management: the following three issues can be summarized as follows:

6.1) People do not have knowledge about intellectual property management. The level of knowledge in managing geographical indications can be described as unknown and cannot be understood. The first level is the fact that people do not know how many GI products their area and what are the special features. For the level of understanding would be the people still do not understand about the content of the Geographical Indication Protection Act BE 2546

6.2) Lack of support from various agencies especially from the government agencies: This research found that the support for geographic indication management in order to generate income and strengthen the community was at a relatively low level both at the policy level and government agencies.
6.3) Lack of publicity and public relations: In some areas, there were public relations for awareness and information regarding the management of geographical indications of the area, however, in the public relations process or the communication process may be faulty or wrong format, as consequence, the information cannot reach the public and the public cannot access the information. It might come from the methods of conveying information to people in the areas. As a result,
7) Guidelines for the development of intellectual property management: Geographical Indication. This research can summarize four possible conclusions as follows:
7.1) Management of Change from the external factors: It is important to introduce new technologies with the management of geographical indication in the area in order to meet the needs of people, changing society, and to develop and commercialize community goods with other areas and to develop a broader marketing network. The product should be more reputable but still keep local identity of the area. Technological advances and external change contexts can be developed and integrated with the management of geographic indication as follows: 1) the use of information technology as a tool for communication and public relations, 2) The technology combines with creative ideas, knowledge, and experience in order to add value to the product and build reputation for geographical indication in the area; and 3) It is necessary to manage external environment by paying attention to the integration or creation of trade networks for GI products to enhance competitiveness and recognizes the TRIPs agreement.
7.2) Support from various agencies: The support from the agency either the budget or the operating resources from central government and local authorities are needed. In addition, budget allocation and public sector support are what the community actually needs because in order to promote GI product: local materials/ ingredients or the method by local people cannot be accomplished without government funding. In addition, some areas have the potential to promote GI products at overseas market but they don't have any networks or agencies to coordinate with the distributor. It is a great benefit when government agencies organize a trade fair both domestic and aboard and a trade and marketing training because it contributes to the success of the management of GIs such as a training to share knowledge on GI or marketing experiences related to the sale of community product.
7.3) Promote positive relationships between community leaders and citizens: Community leader represents the people in the community; therefore, community leader can influence people in the community in involving the management of geographic indication. The characteristics of the leader must be a person who has a good understanding of the geographical management and the role of communicating and distributing news and information to the community. Community leader must initiate activities and also be able to induce villagers to participate in the activities in order to bring collaboration among people in the community. Leader must play a key role in keeping the members of community sustainably together to drive the implementation of community-based geographic identification.
7.4) Knowledge transfer on the management of Geographical Indication: It is necessary to give knowledge on the management of GI to the people in the community in order to have a good understanding of the geographical indication management: GI as community rights which it belongs to people in the area. The transfer of knowledge should start with basic training of the value and important of GI both by the public, private, and local agencies. The methods of communicating are also important. It should be able to convey in full, easy to

understand such as info-graphic as a slide or animation which can be easily understood in a quick and clear time.

## Conclusion

The findings of the research on the development of Guidelines for the system of Intellectual Property Management: Geographical Indication in each age range can be discussed as follow:

1) Comparison of people participation in each generation to intellectual property management: Geographical Indication

According to the study, it was found that the Baby Boomers were involved in the management of GI different for Generation X and Generation Y people, in line with Van den Bergh & Behrer (2011). Van den Bergh & Behrer (2011) explained that people in each age range have grown up in different timing including the historical turning point in both social and economic difference; as a result, the perceptions of people in different ages (Generation) are different. At each age range (Generation) are assimilated to the idea, mindset, values, attitudes, social views and, as a consequence, have similar behavior in the society. This can explain the perception and attitude towards participation in intellectual property management. Baby Boomers are different from Generation X and Generation Y, because baby boomers are a group of people who have life to work, persistence and seriousness, living for work, has loyalty, dedicate to work done or assigned, and try to use ideas and guidelines on their own. They are committed to their success and views as conservative due to the strictness of the traditions. Generation X prefers to have a simple live, focus on informality, pay attention to the balance of work-life balance, and prefer to work or do everything manually. Gen X usually has self-confidence and high self-esteem but at the same time, they are ready to be open minded and creative. This group of people has a flexibility to adapt to changing social and cultural conditions but rarely to adhere to the custom which is very different from the Baby Boomers. Generation Y usually have high self-confidence, have courage, high technology ability, creativity, and prefer to work as a team. Unlike baby boomer and Generation X, they focus is in the frame and strict rules, but for Generation Y, they rarely have patience in work, for example, they will leave the job if there is a low incentive and no future in the job. Gen Y can balance work and their personal life very well. In addition, Gen Y is optimistic, want to contribute to society, and have a good relationship with the people around.

2) A study of factors influencing participation in intellectual property management in each age range (Generation)

Based on the results of the study, factors influencing participation in Intellectual Property Management of all ages were administration and management of change came at first place and the second place was perception and information, third and fourth place were role of leader in the area and knowledge of intellectual property management respectively. This can be discussed as follows.

- Knowledge of intellectual property management: Geographical Indication Based on quantitative research, it was found that average knowledge of people of each age range about intellectual property management: GI in all ages scored an average of 6.13 points or at moderate level. This is in line with the findings of Waraporn Triratarongtakul (2014)'s research on Guidelines for the development of services in the registration of intellectual property. Ms. Waraporn's research found that the level of knowledge of the people who apply for registration of intellectual property at the Department of Intellectual Property was at moderate level. According to the research, people in all ages and those who came to apply for registration of intellectual property, they had knowledge about the procedures and legal issues related to the Geographical Indication Protection Act BE 2546 at moderate level because of the provisions of the law for the public was difficult to understand.

- Perception and Information: The results of multiple regression analysis showed that factors of perception and information on the management of geographical indication in areas affect participation in the management of intellectual property was at high level. It also coincides with the Oratai Kongpol (2006), which mentions the key success factor on the process of managing people's participation should base on the 4S which is starting early. Starting early is part of public participation because the information need to be provided in which will inspire the opinion of the public and then public hearings before making any decision.
- Administration and Change Management: Based on quantitative research, it was found that the overview were at high level. The issue with the most comments was the community would like to export their products to other trade areas. This is in line with the research of Galayarath Noinalum (2009) on the use of geographical indications to protect the value added of agricultural products: a case study of Thai rice. It was found that Thai jasmine rice is different from different cultivated area; as a result, making varieties of Thai Hom Mali rice from areas. It is a good opportunity for the government and people concerned to formulate policy and marketing plan of Thai Hom Mali rice in foreign markets. This will add value of Thai product and creates a competitive advantage from the brand of Thai Hom Mali Rice by using Geographical Indication. Therefore, the promotion of GI products in other trade areas by registering in GI in each area would be of great benefit to the community. It also coincides with the study of Nadja El Benni and Sophie Reviron (2009) stated that the change of trade patterns will not only effects geographic indication but it affects every country's intellectual property protection and promotion. In addition, it may have more impact than other rights and may build more reputation in foreign market and it can add value to exports such as Costa Rica Coffee which can make a reputation for the country and adds value to the coffee from Costa Rica because it can only be grown in the Costa Rica region.

The role of leaders in the area: Based on quantitative research, it was found that the opinions on the role of local leaders in the area were at high level. Most people saw the importance of community leader to have a broad vision and can gather relevant information about geographic indications from outside and be able to motivate the public to participate on the promotion and protection of GI. This is in line with John Kotter's concept of leadership. His emphasis on role of leadership by directing the direction of organization in the long run and try to think of strategies for change to achieve the goals set by the organization. In each area, both formal and informal community leaders recognize the importance of setting the direction for the development of guideline on managing GI in the community; as a consequence, it will give a greater efficiency of managing GI in the area. It is consistent with the concept of Rangsan Sriprasertsri (2001) who described the role of good leadership in the organization should serve the community in every situation such as being an ambassador of the community, collecting data outside the organization, and welcome visitors. Another great leader role is to act on behalf of the community and collects outside information to use in the area. The leader must persuade people in the area to take part in the management of geographical indications. Based on the qualitative findings, people in each age group have different desires on the opinions and styles of leadership.

## Recommendation

1) The result of the study found that people still lack knowledge and understanding on the issue of geographical indications especially in relation to the Geographical Indication Protection Act BE 2546. The Department of Intellectual Property should assist people to have knowledge and understanding of geographical indication through various channels such as the radio, television, and social media in a way that people in each age can understand the content and information. The channels to educate people at different ages will also make the information more accessible to the people. The Department of Intellectual Property should

encourage both public and private agencies in the area to organize activities in various ways to encourage people to know about GI issues and making people more involved in the management of geographic indication in their respective areas.

2) Local authorities/ agencies: Both public and private sectors should promote and encourage people to participate in the management of geographical indication through various activities such as community meeting and activities. In the process of encouraging people to participate, the responsible agencies should consider the time and venue of the activity because people in each age range have different duties and responsibilities. They should also focus on the timing for public to access the information or inviting people to participate in the community activity.

3) Responsibility of agencies in the community: In each province, there should be a unit responsible for the geographical indication in the area along with budget allocation, resources, and knowledgeable people about the Geographical Indication Protection Act BE 2546 in order to assist the area, leader, and people concerned to sort out the problem or ask for their support because after receiving support from agencies concerned, it is expected to be more people participate in the management of geographical indication.

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# Women in the Boardroom for Better Governance Management and Financial Performance

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## Abstract
One of recent topics discussed extensively in boardroom is how to refresh board of directors' composition to counter with fast-moving business environment. Gender diversity is proved to be one solution to contribute and strengthen boardroom's effectiveness. Even though empirical evidences produce inconclusive results about the effect of having or increasing women in boardroom would positively impact companies' financial performance, many countries and business organizations put this issue as top agenda as it can represent the high level of commitment toward good corporate governance practices. Finally, this paper is reflected the future role of women in boardroom by highlighting the important fact and key strength of women's skills in tech experience which is deemed necessarily to overcome velocity of current and future technological disruption.
**Keywords:** Board Composition, Gender Diversity, Women on Boardroom, Financial Performance

## Introduction
*"If you want your company to be successful; If you want your company to operate with wisdom, with care, then women are the best.* -- Jack Ma, World Economic Forum, 2018.
Issues about women directors and board composition have been discussed extensively in past several years. Scholarly research as along with various professional consultation firms have presented ample augments and persuasive statements to highlight the benefits of appointing female representatives to a company's Board of Directors. Although empirical evidence may be inconclusive on the impact of the presence of women in the boardroom on a firm's overall performance and/or financial returns, many parts of the world, especially in Europe, The U.S. and The U.K. have gone in the direction of publicly listed companies to enhance gender diversity issue in their boardrooms. There have been several initiatives such as a new legislative push forward to set a quota of women on boards within The European Union, a campaign in The U.S. urging Fortune 1000 companies to achieve 30% female directors by 2020, and a campaign for more women on boards in The U.K. and Australia. This indicates a present clear momentum toward more gender equality and has spurred the issue to be embraced by political, public institutional and corporate interests (Women on Board, 2018).
The benefits of increasing the number of women in boardrooms have caught the attention of many businesses around the world; however, companies must undoubtedly be convinced to why and how gender diversification will lead to outright positive effects on a firm's overall and financial performance, and secondly, how women can possess superior or different skillsets compared to men. Nonetheless, this article aims principally to discuss the female aspect in building a better boardroom while adhering to the best corporate governance practice. Therefore, the objectives of this article are to discuss:
1) Why do boardrooms consider women?
2) Women directors and companies' financial performance
3) Future roles of women in boardrooms

## Current Situation

Even though there is proof of the benefits of embracing the value of women and their faithful contribution, the percentage of women sitting on boards is still relatively low on a global scale (PwC Governance Insight Center, 2017). From a worldwide perspective, Norway is the pioneer country to set a minimum requirement or a female quota for boards since 2008 (Deloitte Global Center for Corporate Governance, 2016). Currently, Norway and Iceland are the two countries that require female board quota at 40% (Willows & Linde, 2016). The European Union (EU) has also attempted to push the legislative body to require companies to set a threshold of 40% appointment of female non-executive directors (NED). In The U.S., there is also a national campaign to increase women to boards of directors to 20% or greater by the year 2020. This campaign successfully reached its target in 2017, three years sooner than the original aim. The main purpose was to encourage U.S. listed companies regardless of firm size to comprehend the importance and benefits of having women in boardrooms (Women on Board, 2018). Similar campaigns have become widespread in both Australia and The U.K. Running similar campaigns in two different continents, the rational purpose is to enhance more women on boards and will result in increasingly diverse experiences thus bringing superior financial performance and decent corporate governance practices (Willows & Linde, 2016).

The Deloitte Global Center for Corporate Governance recently published its 5th edition on "Women in the Boardroom: A Global Perspective in 2016" to keep track of the movement of female representatives on boards. The status of some countries around the world is summarized in Table 1. It's worth observatory regarding the current percentage of women representatives in boardrooms that male directors are still occupied vast majority of total board seats approximately more than 80%. On the brighter side, countries with advanced economy and are proactive on gender equality such as Sweden and Norway hold leading position of women ratios. On the other hand, advance economy countries in Asia where they have long been predominated by male in society such as Korea and Japan still consider gender diversity as less priority issue. This could be an interesting research comparison between western and oriental contexts to study composition and environment which drive board effectiveness for long term value. Another interesting issue would be to study pros and cons on imposing female quota in boardrooms particularly in publicly listed companies. Habit of women's work-life balance, male dominant culture and qualified female to perform board of director's functions are considered as 3 main challenges for imposing women quota in boardrooms as suggested by Stephens (2013).

**Table 1** Percentage of Females on Board of Directors globally in 2016

| Country | Percentage of Women on Boards | Quota for women on boards for public listed companies |
|---|---|---|
| **North America** | | |
| U.S. | 23 | x |
| Canada | 20.5 | x |
| **Europe** | | |
| Finland | 29.2 | x |
| France | 34 | 40% legislative for both genders |
| Germany | 21.1 | 30% |
| Italy | 30.8 | At least 1/3 of board |
| Netherlands | 26 | At least 30% on each gender |
| Norway | 46.7 | 40% |
| Sweden | 36 | 40% on each gender |

**Table 1** (Con.)

| Country | Percentage of Women on Boards | Quota for women on boards for public listed companies |
|---|---|---|
| Switzerland | 14.6 | x |
| U.K. | 26.6 | x |
| **Australia** | 20.1 | x |
| **Asia** | | |
| China | 9.2 | x |
| Hong Kong | 11.4 | x |
| India | 11.2 | Companies Act (2013) requires at least 1 female on all boards |
| Indonesia | 6.2 | x |
| Japan | 3.5 | x |
| Korea | 4.1 | x |
| Malaysia | 13.9 | Mandate 30% of women in senior management or board positions |
| Philippines | 10.9 | x |
| Singapore | 11 | x |
| Taiwan | 12.57 | x *require only state-owned enterprises to have 1/3 women on board |
| Thailand | 12.7 | x |
| Vietnam | 17.6 | x |

Source: The Deloitte Global Center for Corporate Governance (2016)

Although leading consultation institutions as along with large multinational companies all support the benefits and reasons for the necessity to include female directors in boardrooms, statements and arguments are subjective and may hardly offer evidence in concrete or quantitative term (PwC governance Insight Center, 2017, Deloitte Global Center for Corporate Governance, 2016). Much empirical research helps to confirm these statements by drawing hypotheses between the relationship of women directors in boardrooms and the impact on a company's performance (Horak & Cui, 2017; Gordini & Rancati, 2017; Willows & Linde, 2016; Low, Roberts & Whiting, 2015; Joecks & Vetter, 2013).

**Why Do Boardrooms Consider Women?**

"Board composition" is one of the key topics that was brought to investors' attention worldwide in 2017 (PwC Governance Insights Center, 2017). Businesses are currently facing constant change at an increasing pace. Major issues have intensified ranging from the effect of disruptive forces of technology, the emergence of cybersecurity, and sustainability issues that require businesses to plan in the longer term while dealing with the demand from stakeholders for effective disclosure and transparency. These keys issues inevitably prompt boards to consider forming more diverse groups of directors with the right skillsets.

Boardrooms in the western world have started to consider women because many companies believe that women can serve to fulfill board functions well, not less than men. The main functions of board of directors are to monitor, give advice and counseling and provide necessary resources for firm's operation (Post & Byron, 2015; Garner et al, 2017). Traditional boardrooms have usually been dominated by male until the issue of gender equality, which becomes part of good corporate governance, hit boardrooms around the world. Thus, we start to observe a change and reaction. Boardroom that is composed of diverse group of gender is believed to be beneficial and useful to firms (Governance Insights Center. 2017). This becomes typical argument that many researchers hypothesize and in

search for the outcome. A study about women on board and its important has been classified study-factor into 2 distinctions: observable (demographic) such as gender, age, race and ethnicity and non-observable (cognitive) such as knowledge, education, values, perception, affection, and personality characteristics (Hodigere & Bilimoria, 2015). Nevertheless, gender is the preferred factor by many scholars to test its effect with corporate performance. To summarized, gender diversity in a corporate governance context is a result from the demand for gender equality in the workplace. Consequently, the past several decades have witnessed a rise of female executives and females in boardrooms.

Secondly, a classical theory in corporate governance such as "Agency Theory" is often referred in many studies to firmly support their outcomes of why women may be needed in boardrooms. One aspect of adhering to good corporate governance is to embrace board diversification (Willows & Linde, 2016). The fact that agency theory has always been a classic taxonomy referred mostly in a corporate governance context explaining the role and duty of good "agents" toward their "principals". Women directors are often committed to strong fiduciary responsibility and exercise close attention (Post & Byron, 2015). In addition, they are more risk adverse when dealing with a firm's legal concerns and ethical reputation (Post & Byron, 2015; Chapple, Kent & Routledge, 2012). Upper Echelons Theory (UET) is a leadership related theory which can closely explain why businesses needs women representation on their boards (Hambrick & Mason, 1984). The core idea of Upper Echelons Theory is the assumption of a different cognitive base and values base whereas each individual will elicit different data interpretation and decision making, thus effecting strategic choice and in the end a company's outcome. The study of Dezso & Ross (2012), for instance, examined 1,500 companies listed in S&P between 1992-2006 and confirmed the importance of women in management which brings superior performance to businesses.

In one particular aspect, the heterogeneity of males and females is different in terms of experiences, knowledge and values; these pools of disparity inevitably help engineer board effectiveness in the monitoring and boosting of innovative strategic initiations. A study by Nielsen & Huse (2010) also supports positive outcomes of women directors on a board's effectiveness through more board activities development and lower level of conflict in meetings. In another aspect, several studies from scholarly researchers have shown significant evidence on the positive effect of increasing females on boards by which they tend to make more ethical choices and employ careful ethical judgment which is essential to firms' corporate governance practices (Pan & Sparks, 2012; Valentine, Godkin, Page & Rittenburg, 2009). Furthermore, women who have been appointed to sit on boards tend to monitor board issues closely by becoming active listeners, asking applicable and appropriate questions, developing emotional intelligence with good communication skills and engaging themselves more with board activities (Liswood, 2015; Evan, 2010; Konrad et al, 2008). Consequently, women are considered in boardrooms nowadays because their gender skillsets and inner characteristics.

**Women Directors and Company's Financial Performance**

Vast empirical research has attempted to prove a relationship and the effect of gender diversification on a company's financial performance (Horak & Cui, 2017; Kiliq & Kuzey, 2016; Ming & Eam, 2016; Willows & Linde, 2016; Gallucci, Amato & Santulli 2015; Post & Byron, 2015; Low, Roberts & Whiting, 2015; Joecks, Pull & Vetter, 2013; Miller & Triana, 2009; Ross, 2007). A company's financial performance can be measured by two aspects: firstly, accounting-based performance or accounting returns which use return on Assets (ROA), return on Equity (ROE), return on Investment (ROI), and Asset growth and Sales growth, and secondly, market performance which considers Tobin's Q, the market-to-book ratio and its stock returns. Some research has further measured a company's risk in which they use the debt ratio and coverage ratio as proxies (Horak & Cui, 2017). Nonetheless, the

study results have tended to be inconclusive with a diverse mix of positive, partially positive and neutral with no significant relationship. Some samples are summarized below:

**1) Positive impact**

Hurak & Cui (2017) studied the effect of gender-diversified boardrooms in the Chinese automotive industry toward companies' financial performance; overall results suggested that boards that include women tend to perform better than boards that appoint only male directors. Kiliq & Kuzey (2016) explored the effect of board gender diversity on firm performance of listed companies in Turkey in which the results produced a positive outcome for ROA, ROE and ROS. Post & Byron (2015) conducted a meta-analysis study on women directors and firms' performance in different countries; these research publications were published in English in 2014. The result exhibited a positive relationship between women on boards and accounting-based performance in countries where stakeholder protections are strong; however, in countries with greater gender disparity, companies that have more women directors tend to produce better market-based performance (Post & Byron, 2015).

**2) Partial impact**

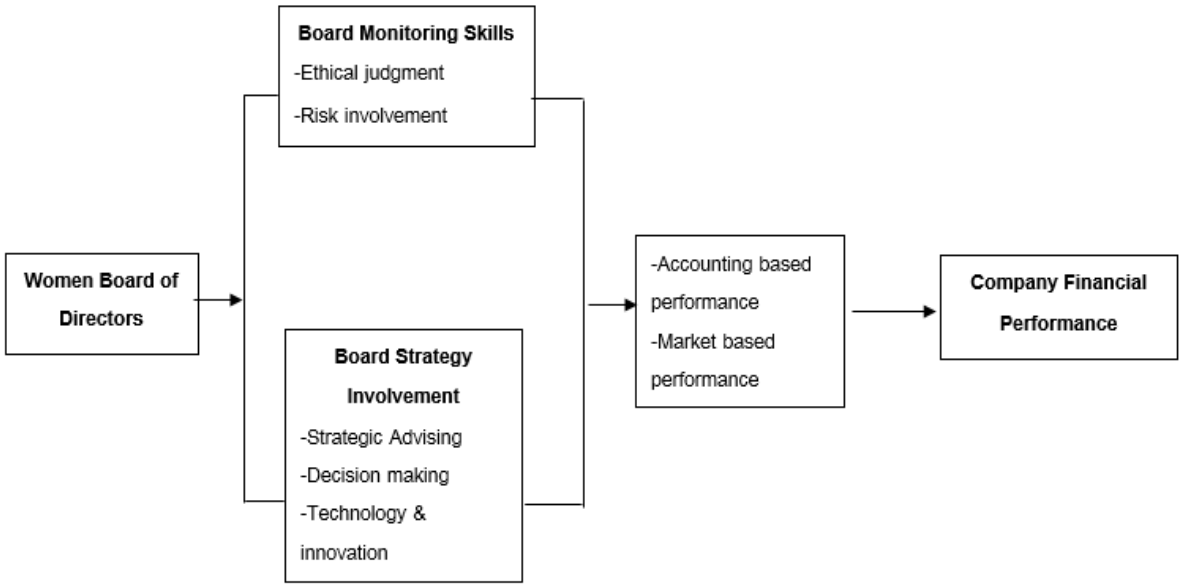
Willows and Linde (2016) found mixed results when measuring women representation on boards of listed companies under the Johannesburg Securities Exchange in South Africa. The study implied positive influence on accounting-based performance but not the market performance proxy by Tobin's Q. Low, et al. (2015) conducted a research comparison in four countries. In Hong Kong, South Korea and Malaysia, female directors produced positive effects to firms' performance. However, in countries of solid cultural resistance, enforcing a female director quota produced negative effects to firms' performance (Low et al., 2015). A concept of "critical mass", maintaining a 30% female quota on boards, was tested in German listed companies; the result seemed to be negative when the number of female directors was less than three; however, financial performance seems to be better when a company has at least three female directors (Joecks et al., 2013).

**3) Neutral/Negative**

The study of Ming & Eam (2016) of 123 companies examined the IPO period of Malaysian stock exchange listings between 2005-2012. They found an insignificant effect of women directors toward companies' performance. Rose (2007) also conducted a study for Danish listed companies between 1998-2001 about female board representation and firm performance. The result found insignificant links among these. The study of Gallucci et al. 2015 focused on women on company boards and female ownership on firm performance in wine producing companies in Italy; the result also showed no effect on firm performance. Solakoglu & Demir (2016) undertook a study on listed companies in BIST100 index of Borsa Istanbul; the result produced weak evidence and was deemed inconclusive. Lastly, Wellalage & Locke (2013) found a negative relationship between the proportion of women on boards in local public companies in Sri Lanka and firm performance.

In conclusion, number of empirical researches from Western and Asian countries demonstrated mix results between the impacts on gender diversity towards firm financial performance. However, majority of studies do favor women inclusion in boardroom, many supporting evidences have been presented in a form of personal competencies which enhance board effectiveness and overall improvement of firm's financial operations. Lastly, after gathering all recent research papers on gender diversity and firm performance, the author would like to propose study framework which can be used by any country and sector in order to come up with different outcomes.

Women on boardroom: a study framework (Adopted from Post & Byron, 2015 and Garner et al, 2017)




**Future roles of women in boardrooms**

The demand for more women to serve on boards of directors is still a dominant issue for effective boardroom governance nowadays. The year 2017 also marked a new wave of board re-composition and board refreshment. There was a record breaking number of new director appointments of companies in S&P 500, out of which 45% were first time directors, 19% of whom had technology and digital backgrounds and 29% had financial backgrounds (Spencer Stuart, 2017). The implication underpinning this movement in The U.S. last year was a result of businesses beginning to face velocity of change, especially in the new technology phenomenon and thus prompting them to reposition their management directions to embrace digital changes.

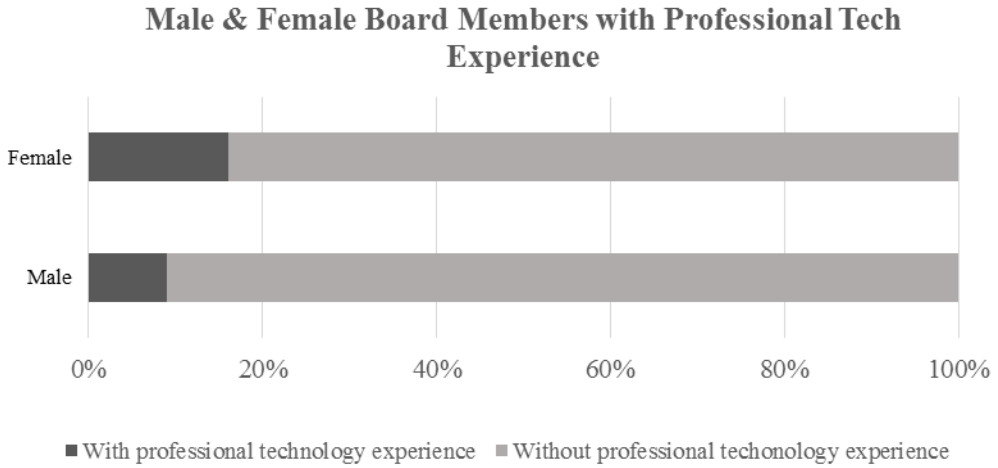



**Figure 1** Male and Female Board Members with Professional Tech Experience
Source: Accenture Research based on S&P Capital IQ data and company websites (2016)

Accenture research (2016) examined women directors in 518 Forbes Global 2000 companies within 39 countries. The result showed that female board members overall gained more professional technology experience (16%), compared to their male counterparts which acquired only 9%, (see figure 2). Accenture also furthered their research study into the 10

most admired countries on technological innovation, namely China, Canada, Spain, France, Australia, The Netherlands, Germany, The U.K., Japan and The U.S. The results confirmed that women exhibited superior technology backgrounds and experience and suggested that more opportunities to consider women with digital knowledge for boards would be beneficial, as shown in Figure 2.

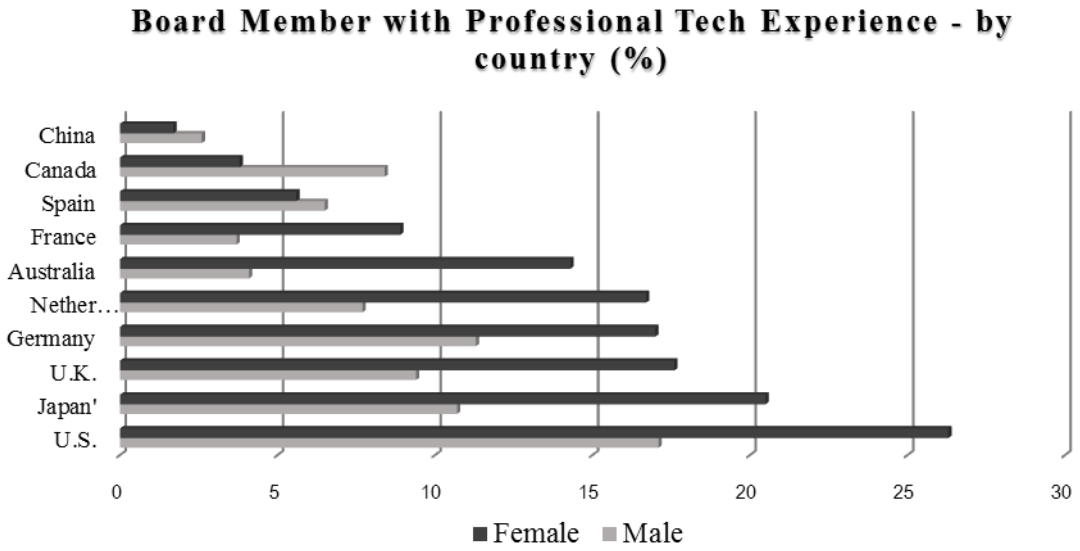



**Figure 2** Board Members with Professional Tech Experience by country, 2016
Source: Accenture Research based on S&P Capital IQ data and company websites (2016)

Alibaba is a congenial example of modern way of Chinese business management. Chinese companies have long been male-dominant environment under Confucian's ideal until now that the country is moving to welcome more females to work in top management positions. Even though information depicted in table 1 China's percentage of women directors appeared to be only 9.2%, women's roles in top management and in boardrooms have been growing significantly for the past several years (Deloitte Global Center for Corporate Governance, 2016). Digital and IT sectors have attracted more women in management roles. Fei-Fei Li Chief Scientist of Artificial Intelligence and Machine Learning at Google is a good example of narrowing the gap between women and digital technology. Both Melinda Gates and Fei-Fei Li are among the main driving forces of "AI4ALL", the nonprofit organization that is designed to foster educational programs for high-school students for AI. Jack Ma, the owner of tech giant firm in China, Alibaba, gave his significant speech on the important of women in management as follow;

*"37% of senior management in Alibaba are women. Part of the 'secret sauce' of our success is because we have so many women colleagues."* -- Jack Ma, World Economic Forum, 2018

Why women have come into recognition in tech-oriented firms nowadays? Ingalhalikar et al. (2013) studied gender difference and the structure of the human brain. The results demonstrated a distinctive characteristic of males' brains that is designed to ease congruence between perception and coordination. On a contrary, females' brains are constructed to support communication between analytical and intuitive processing aspects which could prove to be crucial and relevant to skill requirements when connecting with artificial intelligence (AI) (Ingalhalikar et al., 2013). Perez (2017) also supported the importance of increasing women engineers to benefit the use of AI. Thus, including more women in boardrooms will provide the technological assistance that is necessary to accommodate

nimble adaptation of businesses. Appointing more technology acumen in boardrooms is a good alternative solution in today's business climate.

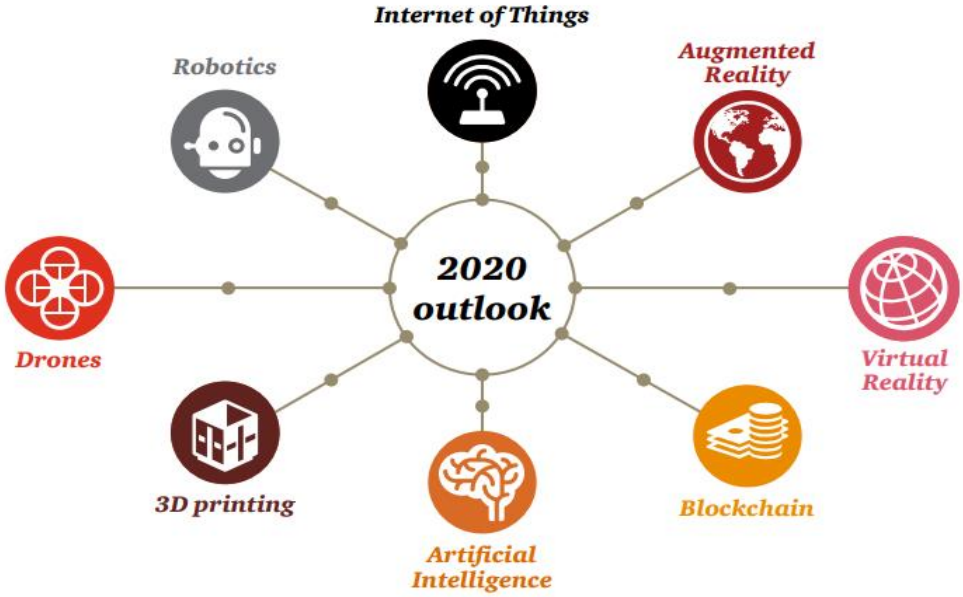



**Figure 3** How boards can tackle the Essential Eight technologies
Source: PwC governance Insight Center (2017)

In addition, figure 3 portrays the eight technologies under a study of the PwC Governance Insight Center that have led to global transformation across industries. Two out of eight technologies that have been most focused on in the boardroom are the biggest interrupters and largest investment areas are "artificial intelligence" (AI) and Internet of Things; however, all eight should provide board members a frame of reference for the qualified and relevant backgrounds they are looking for. Therefore, the composition of refreshment boards has been a dominant topic in 2017 and will continue into 2018 (PwC Governance Insight Center, 2017). Women are able to provide flexibility and thinking innovation, the ability to respond to the velocity of change and able to adapt with a certain speed of change (Dezso & Ross, 2012).

## Conclusion

The main intention of this academic paper is to reiterate the benefits of forming diverse gender in boardrooms and currently the trend is growing significantly (PwC governance Insight Center, 2017). Refreshing board of directors' composition through gender diversity have caught the attention of many research scholars around the world. The issue of gender diversity does not only close the gap on gender equality but the concept of diversity also adhering to good practice on principal of corporate governance. Traditional boardrooms have long been dominated by male all around the world, when the issue of gender diversity is brought into spotlight, call for board refreshment has been started to play a significant role (Hodirere & Bilimoria, 2015). This is why there is growing interest to study women directors in boardroom. The first part of the paper is highlighted benefits of including women in boardroom. Scholarly researches draw hypotheses about benefits of appointing women in boardrooms for example boards would have better focus on company strategic decision making, and secondly, boards would gain close monitoring thus carrying good relationships among company's stakeholders (Breton & Dicko, 2015). Women tend to also add other skillsets that is needed in boardroom (Willows and Linde, 2016; Garner et al, 2017). The

second part focuses on numbers of empirical researches that study impact of women directors in boardrooms and the outcomes of firms' performance, however, the results were mix and inconclusive and appears to be complex (Post & Byron 2015). Nevertheless, many companies around the world seem to outweigh benefit of including women in boardrooms. The last part emphasizes an increasing roles of women directors especially those who posit IT background. Women have clearly demonstrated more soft skills which are essentially important to AI's connectivity. Furthermore, women tend to display strong professional tech experience compared to male directors and this is an essential skill required in today and tomorrow's businesses.

The fourth Industrial Revolution is seen as major global transformation of the digital and technology landscape. Businesses have been disrupted by technology advancement and must adopt an agile strategy to cope with ever changing tech disruption. With the global competitive environment and rapid change in digital technology, boards of directors must keep up with this change and be able to reflect a realistic dimension of a company's growth strategy and potential risks. Lastly, recommendation for further research should reflect and provide suggestion on how board restructuring on gender diversification can surpass and overcome the acceleration of the speed of change in tomorrow's business context. Refreshing new board members need to demonstrate good corporate government practice, focuses on board efficiency, gain investors' confidence to enhance a company's reputation. Diverse gender should consequently reinforce companies to succeed in creating shareholders' long term value creation and to sustain long-run business performance.

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