SUSTAINING THAILAND'S SEAFOOD PROCESSING SECTOR: WORKFORCE DEVELOPMENT

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ABSTRACT

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The seafood processing industry in Thailand is facing a significant transition to Industry 4.0 and this sector is facing a skills mismatch and a skills gap. Therefore, this study aims to explore the characteristics of talent and how to utilize talent in the Thai seafood processing industry by focusing on two theories, the resource-based view and workforce development. This study used the qualitative exploratory multiple-case study research method. The data were obtained from in-depth interviews and focus group discussions conducted with the participants, which consisted of 26 key informants, including civil servants, NGOs, executives in industrial factories, human resource managers, supervisors and the talents. The results showed the characteristics of talent in five key aspects: (1) global mindset; (2) ability to work with data and technological skills; (3) problem sensitivity and complex problem-solving abilities; (4) entrepreneurial skills; and (5) personal and social skills. The aspect of talent utilization through the talent management system had three dimensions: (1) discovering and attracting the right talent at the right time with the right opportunity; (2) training and development to be modernized and keep up with the changes in industrial production; (3) retaining though employee well-being. The results highlighted the sustaining workforce development which was integrated into individual, organization and social level. It can help to create a strong talent pool for a specific seafood processing industry, and the skills and the abilities of employees can come close to the level of demand. In addition, it must support and develop people skills in the community and increase employment opportunities in rural areas.

Keywords: Resource-based view; talent characteristics and utilization; workforce development

1. INTRODUCTION

The food processing industry is one of ten industries which drive national economic development, under the industrial development strategy 4.0 20-year plan (2017–2036). The focus is on innovation to drive the economy. The dimension of labor must be changed from the economy-driven model by transitioning from low-skilled to high-skilled workers. One of the mechanisms used to achieve this is building a skilled workforce and developing the technological knowledge to support changes in the future (Board of Investment, 2019). At the same time, Thailand is facing human resources problems in the industrial sector, such as skills mismatch

and skills gap (Chantapong and Lerspearntam, 2018). Employers will face recruiting and staffing in the key positions (World Bank, 2021). In the next 15 years, 30 percent of employers will face recruiting and staffing in the key positions (Bhatia, 2020). Moreover, World Bank reported that Thailand is one of the top countries in Asia with a shortage of talented employees and food industries face the biggest talent shortages (Rinwong, 2015). In other words, knowledge and skills in terms of manpower are not in line with the demands of the labor market in the changing environment and in the global context (Lunkam, 2021).

The success factors for economic sustainability and the competitive advantage of manufacturing companies are their capacity to understand and adapt to change in order to achieve the development of a skilled workforce (Department of Industrial Promotion, 2015). This is because employee competency is the most important factor in the complex world of work. The creation of strategies for developing and attracting talent can increase efficiency and the competitive advantage in various industries (Karacay, 2018). One classic principle is the workforce development approach: a holistic approach based on the overall needs of regions. It can use two approaches: (1) the sector-based approach focusing on the demand side, including employers and driven marketing strategies. It considers the sectors and industries in a region that are in need of specific organizational skills. The ultimate goal is to create a strong talent pool for a specific industry by utilizing human resources through human capital management and development systems, such as employee retention, attraction, training and learning program and engaging talented person; and (2) the place-based approach is straight supply side, by focusing on people in a specific community (Harrison and Weiss, 1998; Harris and Short, 2014) The key driving force in the developing workforce requires the development and creation of talented employees because of the characteristics of talent related with economic ability (Farndale et al., 2010; Waheed et al., 2012). In addition, the strategy of talent utilization is the heart of creating competitive advantage (Salsbury, 2014; Tang, 2016).

Studies on HRM found that workforce development by building and developing the characteristics of talent and utilizing talent are incomplete. This is because it is just a concept, an exploration and limited empirical ground (Gallardo-Gallardo et al., 2019; Thunnissena et al., 2013). Furthermore, the empirical research on talent utilization is currently quite narrow such studying organizational size. The suggestion that it should be studied by expanding the body of knowledge in different contexts, such as internal and external environments, cultures and types of industry (Thunnissena et al., 2013). Therefore, further research should explore contextual factors as it affects the concept, implementation and the effectiveness of managing and developing a talented workforce (Gallardo-Gallardo et al., 2019). Additionally, the study should use in-depth interviews with human resource professionals who have a direct experience in each industry. It may be studied as a case study to understand a complex issue and the phenomenon in-depth. Data collection should be collected from multiple sources and multiple methods to ascertain the clarity and credibility of the data. Because the research on the characteristics of talent is quite subjective, it means that the appearance is wide and difficult to implement (Dries, 2013; Nijs et al., 2014).

In brief, the abovementioned research gaps in terms of the academic literature pointed out that the characteristics of talent remain ambiguity. Both considering various factors affecting the characteristics of talent and utilizing talent are less interconnected at each level of environmental factors. In particular, the study is linked to the types of industry in each context. This study thus aims to develop workforce in the Thai Seafood Processing Industry in the context of Industry 4.0 by exploring the characteristics of talent and talent utilization, which is based on incorporating the perspectives of the stakeholders. It helps to prepare for developing workforce to be in line with the need of labor market which will be beneficial to individual, organization, social, and country.

2. LITERATURE REVIEW

2.1 Workforce development approach and resource-based view theory

Work force development refers to the system of institutions, programs and policies that allow the labor market to remain active for both employers and employees. The employers invested sufficiently in the development of human capital and labor skills in accordance with the economic goals of business success, household economics, and prosperity (Schrock, 2013). This definition reflects that it connects human capital development with economic goals. Similarly, Giloth (2000) claimed that workforce development was more important than employment training, including employer and employee relationships, deep community connections, career advancement, education, training, retention and attraction focusing on the industrial context and the network connection. It also created opportunities for learning to support labor market production. In addition, Xccelerated (2020) gave the point of view on developing workforce through the goal of workforce development that it can help a workplace to prepare the employees with the skills necessary for a specific type of job. It prioritizes the value of ongoing workplace education and skills development, as well

as addresses the hiring demands of employers. Because the goal of workplace development is to place each employee in jobs where there are career development opportunities — and to nurture that development — employers can ensure to have an adequate supply of qualified employees for their needs. Haralson (2010) divided workforce development into three main perspectives to point out the involvement of various partners and the effects of each level: (1) Individual perspective considers that workforce development is the integration of services, community support, training and education that positions a person for success in the career. The person cannot make a contribution to the society without access to training and education; (2) Society perspective describes that workforce development is to provide the training and education for people to meet the needs of current and future needs of the labor market, in order to maintain a sustainable competitive economic; and (3) Organizational perspective criticizes that workforce development is defined as a training program that provides existing and potential employees with job skills to complete tasks that support the organization to stay competitive in the global marketplace.

According to resource-based view theory, Barney and Clark (2007) claimed that the essence of this theory that the resource base of an organization is a reservoir of the skills, knowledge and abilities to acquire valuable human resources. Lepak and Snell (2002) claimed that the value of human capital is inherently dependent upon its potential to support to the competitive advantage or core competencies. In the resource-based view, Armstrong and Baron, (2002) employees were directed toward creating added value for their organizations and also suggested that an organizational focus on the importance of human resources in a workplace tends to utilize human resources in order to maximize the benefits and employing an economically-driven approach.

2.2 The characteristics of talent and talent utilization

A talented individual is described as a person who has the qualities and a motivation, skills, abilities and experiences in order to effectively perform tasks and achieve business success (Gallardo-Gallardo, 2013: 295–297). Chunthasiri (2020) indicated that the skills in 4.0 era such as global mindset, ability to work with data and technology, complex problem-solving, entrepreneurial skills, personal and social skills had an effect on productivity. Academics and practitioners in the field of Human Resources tried to answer the question of which characteristics of talent will be required. This is especially true in terms of Industry 4.0 and all over the global economy. The global economy and multinational corporations have significantly developed the global mindsets of employee that CEOs of multinational organizations reported that direct needs were preferable for more globally developed talent. It is the key aspect for leaders to compete in international business (Wollenberg et al., 2020). The importance of a global mindset was supported by Chuantian et al. (2020) and Deloitte (2018) mentioned that it is a positive skill that supports individuals and the success of international organizations, multicultural, cross-cultural and global context. With regard to Industry 4.0, technology has changed faster than ever before. A shift in the skill requirement is expected with increased digitalization and to minimize more complex tasks. Overall, there will be a higher demand for a skilled workforce.

The ability to work with data, technology skills and data-based decisions will play a major role in the jobs of the future. Demand for the technical skills required for repairing and maintenance operations will increase (Aulbur et al., 2016). Deloitte (2018) also indicated that this feature as knowledge and the ability to create specialized tasks. Besides, Fadhila et al. (2020: 28) suggested that technological skills must be related with aspects of competitiveness. Maisiri et al. (2019: 90–115) confirmed that the knowledge of advanced technologies did not intend to replace humans for improved productivity. Also, complex problem-solving is one of the top three skills which are expected to be of high demand in 2015–2030, and it will remain important (Aulbur et al., 2016). Complex problem-solving has the ability to see the relationships between industries and crafting creative solutions for problems. It must also keep up with AI (World Economic Forum, 2016). Also, it cannot be replaced by technology. Innovation and entrepreneurial skills support the success increasing opportunities or ideas in the organization (Deloitte, 2018). Entrepreneurial skills are needed for employees with more responsibility (Hecklau et al., 2016). One of the most important things that reflected human values are added to the human workforce with a focus on essentially enduring human skills (Deloitte, 2018). Personal and social skills or so-called soft skills, such as emotional intelligence, coordination, adaption, and the ability to learn continuously were in much higher demand for the workforce of the future. As a result, it has become more crucial than ever and the interactions with customers, suppliers, and other stakeholders has become more dispersed (Karacay, 2018). Asian Development Bank (2021) also supported the idea that the industry will require an increase in the number of workers with personal and social skills. This is because it can affect the development of overall labor productivity (Pholphirul and Rukumnuaykit, 2017). Deloitte (2018) also confirmed that these skills encouraged and improved interpersonal relationship. In terms of learning, it can help the employee to adapt in the changing workplace environment.

Talent utilization can be seen from two perspectives: (1) investing in the activities of talent management, ensuring that human capital affects productivity; and (2) building people with key characteristics or as required by the organization. The basic principle in utilizing talent is that the organization

should be concerned with both material conditions, such as economic well-being in terms of meeting demands for housing, and office facilities and psychological conditions and spiritual well-being, such as respecting labor, knowledge and improving their values (Dengran, 2016: 9–11). Talent utilization in practice leads to workforce development for Industry 4.0. The management and development of the future workforce involves not only attracting, recruiting and developing new talent, but also re-skilling current employees through training programs as well as re-designing work processes to reduce the skill mismatch between jobs and employees (Karacay, 2018; Xccelerated, 2020). In addition, there should be opportunities to provide training for both employees within the organization and people in the community (Deloitte, 2018). Such encouraging vocational training helps self-employed individuals earn a higher income overall (Bairagya, 2021). An economist has the perspective that equal access to education and training promotes employment opportunities which are essential in social and economic development. Well-designed programs for rural employment also build motivation and hope to work in the community. This will also create a balance of employment between urban and rural areas (Nübler, 2000).

Supporting a learning culture helps all existing and future leaders and managers to improve and develop their skills, knowledge and expertise continuously (St. Christopher's, 2017). In particular, training more classical manufacturing tasks should be adapted to the needs of Industry 4.0-related skills, abilities and knowledge. The workforce needs to integrate theoretical and practical knowledge through reflective practice (Ras et al., 2017). Learning the new positions in foreign branch companies supports stepping out of the comfort zone and job rotation is a key tool for the organizations to become international (Llopis, 2015). The overseas assignments and overseas education significantly promote the development of a global mindset (Wollenberg et al. 2020). Organizations should create a body of knowledge in the organization by sharing experience between generations. In terms of attracting talent, workplaces should collaborate with educational institutes to support dual-education apprenticeship with students studying at colleges or universities (Acrecent Financial Corporation, n.d.). There has been an increase in the quality of the labor force by on-the-job training, creating talents from outside organizations and providing opportunities for jobs in the future. In addition, youth retention and advancement can be supported through the promotion of physical and mental health, paid family leave, and well-being (Deloitte, 2018). Building motivation in utilizing talent through retaining talent should be both a psychological and a physical need (Russo, 2017). It will protect the critical talent in the organization and boost talent acquisition effectiveness (Allegis group, 2018)

In short, the literature review above indicated that the researches on the characteristics of talent and utilizing talent are all studied under the environmental challenges in the Industry 4.0 context and it is not linked to the types of industry. Thunnissena et al. (2013) and Gallardo-Gallardo et al. (2019) confirmed that the characteristics of talent and utilizing talent need to be studied in accordance with the changing environment and the industry type, in order to be able to apply the results of empirical studies to further benefit. In Thailand, the government has begun laying Industry 4.0 and the seafood processing industry is considered to be one of the most competitive, but human capital development in this sector still lacks the specific characteristics in building talented employees. Therefore, this research was conducted as a pilot study to expand the knowledge of workforce development in the seafood processing industry based on building characteristics of talent and utilizing talent. The findings should be applied for the development of the industrial workforce in the future.

3. METHOD

This research employs the qualitative exploratory multiple-case study as a methodological design (Yin, 1993). It is to gain insight into understand of the characteristics of talent and utilizing talent from stakeholders in this sector under the complexity of the phenomenon. (Dries, 2013; Nijs et al., 2014; Gallardo-Gallardo et al., 2019).

3.1 Ethical issues

Based on the evident respect for the human dignity of the participants in this study, ethical approval for this research was granted by the Ethics Committee of Srinakharinwirot University, Thailand. (Ethical clearance number: SWUEC/E-157/2561). The informed consent of the participants in this research were obtained in order to audio-record the face-to-face interviews. Therefore, the interviews could later be transcribed, translated, and analyzed. All of the documentation related to their participation, such as the informed consent documents, were collected. The participants and organizations were assured of the anonymity and confidentiality of the study by using pseudonyms in this article.

3.2 Region selection

This study was specific to the seafood processing industry since this type of industry is ranked as 1 in 10 of the target industries in driving economic growth and employment according to Industry 4.0 strategy of

Thailand and this research was also based on the leading seafood processing industry in southern Thailand (ThaiFranchiseCenter, 2015). The criteria for choosing the factory were as follows: (1) a talent management system; (2) having products exported to international markets; (3) receiving awards for administration and management, and leading a high-performance organization; and (4) to be on a voluntary basis.

3.3 Participants and data collection

In this research was used the purpose sampling technique for the identification and selection of information-rich cases (Patton, 1990). This involved identifying and selecting individuals or group that were especially knowledgeable or experienced with phenomenon of interest (Creswell, 2013). The data collection consisted of two techniques, with a total of 26 key informants. The number of the key informants of each data collection technique is shown in Table 1.

Table 1: The Number of Participants of Each Data Collection Technique

Name	Organization	Role in organization	Role of interviewee	Data collection technique		Age	Edu.
				I	G	(Years)	
PO 1	NGOs1	Administrator	CEO	✓		52	Master
PO 2	NGOs2	Administrator	CEO	✓		70	Master
PO 3	NGOs3	Administrator	CEO	✓		61	Master
PO4	GOVT	Administrator	CEO	✓		58	Master
C1	Industry A	Administrator	Top Mgr.	✓		40	Master
H1	Industry A	HR Recruitment Mgr.	HR.	✓		39	Bachelor
H1	Industry A	HR Recruitment Mgr.	HR.	✓		39	Bachelor
H2	Industry A	HR T&D Mgr.	HR	✓		38	Bachelor
H3	Industry A	HR Employee Evaluation Mgr.	HR	✓		36	Bachelor
S1	Industry A	Production. Mgr.	Sup.	✓	✓	31	Bachelor
S2	Industry A	QC. Mgr.	Sup.	✓	✓	34	Bachelor
TS1	Industry A	QC Supervisor	Talent	✓	✓	25	Bachelor
TS2	Industry A	QC Supervisor	Talent	✓	✓	26	Bachelor
TS3G	Industry A	Production Supervisor	Talent		✓	25	Bachelor
TS4G	Industry A	Production Supervisor	Sup.		✓	24	Bachelor
C2	Industry B	Administrator	Top Mgr.	✓		35	Master
H4	Industry B	HR. Mgr.	HR	✓		36	Master
ST 1	Industry B	Production Mgr.	Sup.	✓		32	Bachelor
ST 2	Industry B	QC Mgr.	Sup.	✓		31	Bachelor
TS 3	Industry B	Production Asst. Mgr.	Talent	✓	✓	27	Bachelor
TS 4	Industry B	QC Asst. Mgr.	Talent	✓	✓	26	Bachelor
GS1	Industry B	QC Supervisor	Talent		✓	24	Bachelor
GS2	Industry B	QC Supervisor	Sup.		✓	25	Bachelor
GS3	Industry B	Production Supervisor	Sup.		✓	26	Bachelor
GS4	Industry B	Production Supervisor	Sup.		✓	27	Bachelor
GT1	Industry B	QC Supervisor	Talent		✓	28	Bachelor
GT3	Industry B	QC Supervisor	Talent		✓	29	Bachelor
				18 69%	14 54%		
Total 26 key informants							

Note: I: In-depth interview and G-Focus group discussion

The first technique was an in-depth interview. The aim of this technique was to obtain information that was relevant to the point of view and the experience of the participants. The inclusion criteria for the key informants in this study were as follows:

(1) Civil servants in the area of government policy to support this sector in moving towards Industry 4.0, providing opinions and making recommendations for setting policy strategies and regional industrial development plans, pushing policies and strategies for regional industrial development plans into action, developing and providing services to industries for competency development and consulting services on information services, technology design, development services and at least 10 years of experience in the seafood processing industry;

(2) The NGOs related to industrial development by exchanging information and consulting the government in negotiating with importing countries, in terms of both standard regulations and also promoting and supporting the industry, with a focus on developing sustainable growth in all industrial operations and advocating the food processing industry regarding collective problems and obstacles and with at least 10 years of experience in the industry. For civil servants and NGOs were provided to be an observer that one of the important partners at the workforce development in the industrial sector, that these groups act as a policy maker at the macro level to make policies and set plans;

(3) Group executives, including 3.1, top executives and policy makers in an organization, especially human resources management and development and at least five years of experience in the seafood processing industry; 3.2 human resources managers and practitioners in talent utilization through talent management and at least four years of experience in the seafood processing industry; 3.3 supervisors working with factory operation and utilizing talent directly and at least three years of experience in the seafood processing industry; and

(4) Talents with the following criteria: skilled Thai labor, working with production and quality control department; and educational level of at least secondary education, with at least two years of experience in the seafood processing industry and on a voluntary basis. The executives and talents were designated as actors, because this group was in the corporate structure and was directly close to the events, management, administration and development in the workplace. It can see that each group has the information and perception based on the context, event and role.

The second technique was a focus group discussion which aimed to elicit the opinions and experiences of the key informants to acquire information through discussions from multiple perspectives. This technique was conducted after in-depth interviews by organizing a joint group consisting of supervisors and talent who used the same criteria above. Therefore, the data collection technique used in this research was 360-degree view multi-source assessment and multi-methodology. It helped to see the perspectives of each stakeholder about characteristics of talent and talent utilization. The main questions for the key informant what are the characteristics of talent in the seafood processing industry through Industry 4.0, and how a company can utilize talent in terms of Industry 4.0?

3.4 Data analysis

Before data analysis, this research verified the raw data used a triangulation strategy, as identified by Bans-Akutey and Tiimub (2021): (1) the data triangulation used a variety of data sources: civil servants, NGOs, top managers, HR managers, supervisors and the talent; (2) the theoretical triangulation used multi-theories, as shown in the literature review; and (3) methodological triangulation. The data collection used both the in-depth interviews and the focus group discussion technique. The data organization included: (1) organizing the physical data by transcribing it from a voice recorder. The audio recordings were transcribed verbatim in Thai. The only quotes used in this article were translated into English. With a verbatim transcription and a summary of the essence, the data files were then stored on a computer; and (2) organizing content data. This research applied the coding process was based on Saldaña (2013), which included two cycles. The first cycle of coding – initial coding — developed the data corpus and used line-by-line coding and in-vivo coding. The second cycle of coding — focused coding — was derived from the same meanings in the first round were combined. On the other hand, the code reflects the idea it was kept.

In terms of the data analysis, this research used two main techniques, beginning with component analysis and followed with analytic induction. The details for each of these techniques are as follows: (1) component analysis. After coding, the data was arranged into categories and themes. These themes were used to write a narrative linking to the studied phenomenon; and (2) analytic induction. After creating the themes, the structure of the code was considered. Firstly, the researcher looked at the frequency of the number of individual participants who talked about a particular theme from the in-depth interviews. That is, people with similarities in terms of speech were arranged together. If any of the information was not considered important, and then either omitted or expanded. This research explored how the characteristics of talent and talent utilization in the Thai seafood processing industry for Industry 4.0. It aims to achieve sustainable workforce development of this sector. The results of the study were reported on both the frequency of the participants in each theme by calculating the ratio, along with an analysis of the words used in the interpretation process. Namey et al. (2008) supported the notion that the frequency of the participants maintained a degree of bias. It

showed who had spoken more, rather than only seeing the number of themes. Also, the in-depth interviews and focus group discussions were reported together and focused on the results of the in-depth interviews and then taking the findings of the focus group discussion to complement each point.

4. RESULTS AND DISCUSSION

This section consists of two main areas: (1) the characteristics of talent; and (2) talent utilization with a focus on Industry 4.0.

4.1 The characteristics of talent through Industry 4.0

According to Table 2, the findings showed the characteristics of talent in five key areas: (1) global mindset; (2) ability to work with data and technological skills; (3) problem sensitivity and complex problem-solving abilities; (4) entrepreneurial skills; and (5) personal and social skills.

Table 2: The Characteristics of Talent through Industry 4.0 by Category

Category	Participant's response (%)	Required skills	Context
Global mindset	100	A willingness to learn and awareness of cultural diversity.	Recognizing individuals and cultural differences.
		Business and social responsibility.	Understanding business in the global context and corporate social responsibility.
Ability to work with data and technological skills	100	Ability to work with data	Ability to operate and control a system and understand the information.
		Technological skills	Able to manipulate technology and evaluate efficiency. Understanding of and ability to use new production technology.
Problem sensitivity and complex problem-solving	56	Problem sensitivity	Able to be sensitive to problems and predicting what problems might arise.
		Complex problem-solving	Understanding the change and complexity of production process system. Collaborating the relationship between problem, people and the new machines.
Entrepreneurial skills	78	Sense of responsibility and skills	Able to have a sense of belonging at work and an awareness of responsibility.
		Innovation abilities	Ability to think and create the new thing which added value.
		Cognitive flexibility	Willing to receive new and different ideas and ability to generate multiple alternatives.
Personal and social skills	89	Coordination	Collaborating with others, group, group and between tasks, people and machines.
		Adaptability and learning	Ability to be open-minded, ready to change, continuously learning new things, seeking and applying knowledge, and willingness to learn.
		Social and emotional intelligence	Able to have empathy, learning to live with failure, and controlling emotion.

4.1.1 A global mindset

It is an essential skill for talent leaders. This characteristic is an absolutely important feature and needs development to support talents on an international career path. They must have insight, the ability for global challenges and can be adapted into the local and organizational context. Particularly, this sector is faced with IUU fishing, by improving and controlling regular fishery standards. Thailand is one of the first countries in the world which have the potential to produce fishery products and sell them overseas, so it is imperative to be aware. For instance, one executive of a manufacturing company talked about the importance of a global mindset: "A global mindset is cultural diversity, it is absolutely important for our organization because we are a big company in Thailand to produce seafood products and operate worldwide with plant facilities in foreign countries. Also, we interact with employees from other countries of at least three nationalities. We are facing IUU fishing: Illegal, unreported and unregulated fishing, which is a key condition in this sector. These situations are a challenge for our organization. We have to build a leader with these qualities" (C1: NGOs). These findings are supported by Deloitte (2018); Wollenberg et al. (2020) mentioned that that this feature is extremely important, especially leadership, as this skill is related to multiculturalism and the cross-cultural and global context which supported and promoted expanding markets in foreign countries and diversity in the workplace.

The global mindset consisted of the following elements: (1) willingness to learn and awareness of cultural diversity. For example, TS2 claimed that "There are differences in the ethnicity of the workers, we must consider that everyone is different and should understand the differences of each culture". (TS2: Talent). Also, focus group discussions supported this point. In the following example, one of the participants stated that "We work with laborers of several nationalities and some administrator from a foreign country, which are a multiple organization environment and willingness to learn" (GS1); and (2) business and social responsibility. The talent should understand the business context, the global context and corporate social responsibility. They also should be aware of food safety standards, fisheries law and product development to meet the various need of consumers, as they are connected with organizations around the world. One of the NGOs said that: "Talents have to know that where is the world going and how or the change of the world flows, they must consider the environment of business and corporate social responsibilities such as food safety, the ILO Good Labor Practices (GLP), and IUU fishing. They must have the ability to look at the products in each consumer group". (PO 2: NGOs). These findings are consistent with Chuantian et al. (2020) mentioned that a global mindset is a positive skill that helps individuals and companies succeed internationally. Corporate social responsibility for employees working in the big industries are a huge concern, in terms of survival, growth and sustainability in the global context.

4.1.2 The ability to work with data and technological skills

These skills are still essential since the modern technology can only replace some functions. In particular, work is repetitive and does not require a resolution. These findings are supported by Maisiri et al. (2019) who strongly confirmed that the knowledge of advanced technologies was not intended to replace humans for improved productivity. Furthermore, the finding shown that the use of technology on this site has changed as the production system which has been adapted in the development direction. Even during the digital transformation to Industry 4.0, employees should have the ability to work with data because they control and operate the system and also understand the information. In this sector, employees who work on the production line are still important by the nature and type of the work. It only increased the complexity of working with technology. The employees must have the ability to manipulate technology and evaluate efficiency, understanding and using new production technology. For example, C1 asserted that *human skills are needed in the industry:* "We only cut off the people in some functions, but in other functions, people are still necessary, such as checking products and manipulating operating machines. Therefore, when work environment has changed, the employee must have ability to control new technologies and know how the process works" (C1: Top executive). The findings were consistent with Fadhila et al. (2020: 28) as they suggested that technological skills must be related to the aspect of competitiveness. Therefore, the characteristics of the talent related to these changes. This skill is more complicated and supports and increases employee productivity. These findings are supported by Aulbur et al. (2016: 45) and Deloitte (2018) who reported that these skills are necessary for Industry 4.0 and this feature is the knowledge and ability to build specialized tasks.

4.1.3 Problem sensitivity and complex problem solving

The reason why talents must have this skill as a result of the complexity in manufacturing processes and systems. Despite the common use of modern technology, the final decision-making process is still made by people and that technology cannot replace this aspect of a person. As a result, these attributes support the ability of the talent to work under the complex transformation of the production process. These skills are quite important and it is required to increase in demand. These results corresponded with Deloitte (2018) who asserted that currently, technology cannot replace this feature. Aulbur et al. (2016) also confirmed that these skills are needed to be high demand in 2015–2030. The purpose of this skill is to support the talent that has sensitive problems and managing and solving complex problems. The participants explained that problem sensitivity is ability to sense if something is wrong and predicting problems. Therefore, complex problem-solving is to understand the relationship of the problems between people and new machines, the ability to collaborate on problems and the ability to find solutions to these problems. The findings were consistent with World Economic Forum (2016) stating that it is a skill that people can see and coordinate the relationship between work, people and machines.

4.1.4 Entrepreneurial skills

These attributes require three main aspects: (1) sense of responsibility skills; (2) innovation abilities and (3) cognitive flexibility. Sense of responsibility skills is the sense of belonging at work and awareness of responsibility. This is shown in an example from the perspective of one NGO: "Normally, talents are responsible people, they also have a high level of responsibility." (P2: NGOs). Moreover, the participants in focus group discussions provided the same opinions as the in-depth interviews. In addition, they stated the responsibility of talented people come from an inner responsibility, it occurred naturally, beyond any control and without

any material motives. For example: "From my perspective, the responsibility of the talent comes from inside, they do not need to be forced, it comes from within" (GS2). From this point, Hecklau et al. (2016) supported that these skills belong to talented employees who are more responsible. Innovation abilities is the ability to create new things which add value. This is confirmed by the opinions of a top executive: "…For example, the technicians may think of new methods for using work functions and reducing work procedures. They should think about meeting the needs of the company, since the company was focused on cost-effectiveness". (C1: Top executive). Cognitive flexibility concerns the willingness to receive new and different ideas and the ability to generate multiple alternatives. The details about these skills were as follows: "The ability to open their minds or the willingness to receive new and different ideas. The ideas must be more flexible in a situation and context because the world is changing fast. If an organization has people with cognitive flexibility, it will make them easy to adapt themselves." (PO 2: NGOs). These results are supported by Deloitte (2018) who reported that entrepreneurial skills are knowledge and skills which support the success of an idea. In term of innovation, it helps the talent to see changes in terms of directions in business and job opportunities.

4.1.5 Personal and social skills

Technology cannot replace this kind human skills and it is a fundamental skill, which consists of the followings:

(1) Coordination. It is the ability to collaborate with others and work in a team. Also, the talent must collaborate in terms of task, man and machine. As one supervisor said: "Having the ability to collaborate with teams, individuals and groups are very important. Especially in the Industry 4.0 era, there must be collaboration between man and machine which makes a change task in the production process". (S1: Supervisor);

(2) Adaptability and learning. This ability consists of open-mindedness, readiness to change, continuous learning, seeking and applying the knowledge, and willingness to learn. As one supervisor and one NGO claimed: "Entering Industry 4.0, we have to accept these changes first, we need open minds, and we are ready to change and have positive attitudes towards organizational change" (ST1: Supervisor) "In the Industry 4.0 era, the talented have to change their mindset from a focus on learning and an openness to continuing learning new things. Because the world of work and the environment have been changed so fast, they must develop themselves." (PO 2: NGOs);

(3) Social and emotional intelligence. Regardless of whether or not it applies to Industry 4.0, emotional and social intelligence is essential quality for the talent. Technology can never replace this human skill. For example, one NGOs posited: "Nowadays, emotion, feeling and the human touch cannot be replaced by AI. So, humans should be more intelligent than AI. In particular, the emotions and feelings of people are absolutely important. People who lack empathy are truly disinterested in others and they are very difficult to stand in society". (PO 1: NGOs).

Also, the findings of the focus group discussions showed that the personal and social skills were brought up quite a lot and in the same direction as the findings of the in-depth interviews. For example, the participants reflected on readiness to change and a positive attitude towards change: "The talent should be ready all the time, such as readiness for knowledge, learning and change, and looking at the surrounding environment positively" (GT 1). "The talent must have the ability to live under changing circumstances since most people have left the organization, they lack adaptation." (GS 3).

The results indicated that personal and social skills are a fundamental and essential human attribute that technology can never replace and has continued to increase in importance for successful workforce development and the world of work. The Asian Development Bank (2021) also supported the idea that the industry requires an increase in the number of workers with social skills. Deloitte (2018) also confirmed that this feature supported the building of interpersonal relationships and interaction with other people, which can help in coordinating with people inside and outside the organization. In terms of learning, it helps the talent to adjust and participate in the changing world of work and it will be in high demand at work places of the future. As well as with the findings of Pholphirul and Rukumnuaykit (2017) which maintained that social skills are statistically significant for the professional workforce and affecting the development of overall labor productivity.

4.2 Talent utilization through a talent management system in Industry 4.0

Talent utilization through a talent management system indicated in three aspects: (1) discovering and attracting; (2) training and development; (3) retaining. It can be found in Table 3.

4.2.1 Discovering and attracting talent

This strategy was to build new talents by collaborating partnerships at local colleges and universities. It included offering an apprenticeship program and producing talents at educational institutes. The findings indicated that it had a positive impact on three levels:

(1) At the individual level; It was to increase knowledge, problem-solving skills and self-reliance to adjust to the world of work and had a positive attitude at work;

(2) At the organizational level; The skills of the talent and job were well-matched, hired the right person and reduced new employee turnover;

(3) At the social level; Manpower was required to enter the labor market with knowledge, experience and practice which responded to the needs of the employers. It also reduced the problem of migration from rural to urban areas due to employment in the community.

It can be seen that the results show a perspective into external recruitment for talent which can provide for determining where to acquire and how to hire the best people. This view can also solve skill mismatch problems. Karacay (2018) suggested that the problem of talent development in the Industry 4.0 era is that the people and the tasks are inconsistent. Therefore, organizations must increase their ability to attract talent, which is a key solution. The practice of this research created collaborative partnerships with local colleges and universities. These findings were supported by Acrecent Financial Corporation (n.d.) which reported that organizations should establish cooperation with educational institutions in the community by creating a curriculum together to help develop labor skills to meet the needs of the organization. In addition, factories should provide students with opportunities for internships. Similarly, Aulbur et al. (2016) supported the idea that the preparation of manpower is required to enter the labor market.

Table 3: Talent Utilization through a Talent Management System in Industry 4.0 Era by Category

Category	Participant responses (%)	Talent utilization strategy	Maximum achievement
Discovering and attracting	78	Building new talents: collaborating in partnerships with local colleges and universities by offering an apprenticeship program and producing talents at educational institutes.	- Individual: increasing knowledge, problem-solving, self-reliance, the ability to adjust to the world of work and having positive attitudes at work. - Organization: hiring the right people and reducing new employee turnover. -Social: manpower with knowledge, experience and practice and reducing the problems of migration from rural to urban areas.
Training and development	72	Creating opportunities for the new roles: delegating specific and special projects and new positions in foreign branch companies. Training program: designing a training program associated with changing skills and knowledge, such as new technology and innovation, leadership, team building, food and fishing law and business management, establishing workplace knowledge, transferring experience from generation to generation and providing vocational education for people inside and outside the organization.	- Individual: adapting to new jobs, seeing changes as an opportunity to achieve career success faster than others. - Organization: employees with the skills storage to prepare and replace future leaders. - Individual: enhancing the physical productivity, technical efficiency of talent in production, coordination ability, understanding business, responsibility and task completion. - Organization: reducing the conflict between different departments in the workplace. - Individual: changing behaviors at work, increasing skills, knowledge, theories, practices and performances and self-employment, self-confidence and commitment to professional hope. - Organization: closing a skill gap, creating a continuous learning process. -Social: creating income opportunities and creating jobs in communities.
Retaining	100	Making the talent feel important by responding to their psychological needs and keeping the talent happy by responding to their physical needs.	-Individual: increasing motivation and satisfaction and improving self-development. -Organization: increasing the image of the organization and effectiveness of the acquisition of talented employees, reducing employee turnover and improving hiring.

4.2.2 Training and development of talent

There were three strategies for talent utilization, as follows:

(1) Creating opportunities for the new roles included delegating specific special projects and learning the new positions in foreign branch companies. This strategy had a positive affect both individual and organizational levels. That is, talented people were better at adapting to the new jobs, saw the change as an opportunity and achieved career success faster than others and organizations had the skills storage of employees to prepare and replace future leaders;

(2) Training programs, with regard to Industry 4.0 and the changing nature of work and skills, so that most major organizations recognized the need to re-skill and up-skill employees. Also, designing a training program was associated with changes in skills, knowledge and enhanced multi-skills, such as the new technology and innovation, leadership, team building, food and fishing law and business management. Moreover, the results confirmed that the development of multi-skill talents is a key priority that the organization must use for job rotation. Overall, this strategy led to enhancing the physical productivity and technical efficiency of talent in production, coordination ability, business understanding, responsibility and tasks. Moreover, it reduced the conflict between different departments in the workplace;

(3) Establishing knowledge. This strategy created a continuous learning process, such as providing short-term vocational certificate courses for people inside and outside organizations, exchanging knowledge through networks and teams, and transferring experience from the old to the new generation. Furthermore, the significant findings were found that providing short-term vocational certificate courses for the talent in the organization promoted skills, knowledge, theories and practices in accordance with the needs of the organization which helped to close the skill gap. This group changed behaviors at work and increased performance levels. In addition, unemployed people in the community after attending this course, some of them became self-employed, for example, starting a small seafood processing business and others used the certificate to apply for industrial jobs. This study indicated that encouraging vocational education opportunities is an opportunity to generate family income and to create jobs in a community, which can reduce economic inequality through employment when equal opportunities are available. It also builds self-confidence and a commitment to professional hope.

The above results illustrate that creating opportunities for new roles is a significant strategy for organizations to prepare talent for future leaders. This result is consistent with Ras et al. (2017), who confirmed that this strategy is preparation for the talents to move up into a management position. The findings also indicated that these activities become more important in the future and support a career path to the international level. Also, Wollenberg et al. (2020) supported the idea that overseas assignments and education significantly contribute to the development of a global mindset. For training programs, organizations strive to design training programs to suit the changing employment context by using re-skill and up-skill techniques to close the skill mismatch and skill gap, which promote enhanced productivity and performance. This is consistent with Karacay (2018), who claimed that organizations that face business changes and as a result, the skills and the abilities of the workforce do not respond to these changes. As a result, organizations should start reskilling and upskilling their workforce to reduce the discrepancies between people and their jobs and promote performances and productivities. Similarly, Llopis (2015) confirmed that job rotation is an essential tool for organizations to become international. This tool helps employees to accomplish multiple tasks and multi-skills, which were also useful in building future leaders. Therefore, establishing knowledge through providing short-term vocational certificate courses for people inside and outside the organization, which is the best talent utilization tool for self-employment and reducing economic inequality and migration from rural to urban areas. These findings are supported by Bairagya (2021) who found that vocational training helps self-employed individuals earn a higher overall income. Moreover, Nübler (2000), who is an economist, pointed out that equal access to education and training, as well as access to employment opportunities is considered important in the context of social and economic development and well-designed programs for rural employment provide hope and motivation with regard to working in the community. It will also create a balance of employment between urban and rural areas.

4.2.3 Retaining talent

To maintain talents in an appropriate position and to ensure a maximum return on investment in talents the two talent utilization strategies should be interpreted:

(1) Making the talent feel important as a response to the psychological needs of the talent, such as assigning challenging tasks, greater responsibility and setting career paths. The talent reported that challenging work is to gain the development opportunities and learning new jobs and motivating them to strive for success. In the following example, one talent asserted the following: "I do not pay attention to salaries. I look at getting development opportunities, learning new jobs and supporting organizations. I am of the view that it is psychological feeling rather than money" (TS2: Talent);

(2) Keeping the talent happy. This aspect is a response to the physical needs of the talent, such as monetary and non-monetary compensation. One of the NGOs added: "Compensation should be appropriate for the position, responsibility and cost of living. Organizations must take care of both employees and their families to have dignity. Employers must look at the employee's interests by thinking that they are our stakeholders to bring the success in an organization" (PO2: NGOs).

Based on the results of this study, it was found that were provided incentives by integrating between the psychological and physical needs, because the organizations wanted to promote self-development together

with the well-being of both employees and their families, contributing to sustainability in utilizing talent, especially skill utilization. These strategies had a positive effect on organizations, such as improving the image of an organization in retaining talent, which in turn increased the effectiveness of the acquisition of talented employees, reducing employee turnover, and improving hiring. These findings are supported by Russo (2017), who reported that building motivation in terms of utilizing talent through retaining it should be both a psychological and a physical need. For example, an organization provides job complexity which enhances rewards derived from skill development. Similarly, Dengran (2016) suggested that organizations should provide both economic and spiritual well-being and retaining talent sustainably. Likewise, the Allegis group (2018) reported that retaining critical talent should be required for protecting critical talent in the organization and boosting talent acquisition effectiveness, especially psychological needs, such as supporting employee development. It can be one of the most effective tools for protecting an organization from the adverse effects of global talent scarcity.

Ultimately, the overview of workforce development towards the sustainability of the seafood processing industry was examined in this study and indicated that this research is a pilot study that supports sustainable labor force development and building bridges between individuals, organizations and social needs. Firstly, at the individual level: starting from the required and key characteristics of talent by stakeholders in the seafood processing sector leading to skills development in order to meet the demands of this sector. The process of talent utilization is the process of investing in the talent management system, ensuring that human capital affects productivity and can develop the key characteristics of talent. According to the employees in the workplace and the general public were encouraged to pursue vocational education in the industry, organized by company and educational institute, in a community. It is an important tool for upskilling, reskilling and to close a skill gap, enhancing performance, self-employment and a higher income. It also pointed out that retaining the new workface responds to the psychological needs, especially opening up opportunities for self-improvement and that development is the best way to achieve skill development. Secondly, at the organizational level: the results showed the key points for developing effective leaders by supporting a learning culture in both national and international areas and for all existing and future leaders. Especially, sending talents aboard may generate and transfer knowledge and develop global leadership skills. This is an important strategy for organizations to gain a competitive advantage. Lastly, on the social level, the results reflected the importance of creating and developing skills, abilities and knowledge to meet employer needs and providing opportunities for people and students in the community to access the labor market, which can create jobs and employ people in the community. This drives the local economy, which is concerned with sustainable development goals in decent work and economic growth.

5. CONCLUSION AND RECOMMENDATION

In summary, workforce development in the Thai seafood processing industry may lead to sustainability focused on the characteristics of the requirements of the talent and related to competitive ability, and talent utilization, through a talent management system integrated into the workforce development approach in two areas:

(1) The place-based approach is directly supply side, by focusing on people in specific communities, such as providing short-term vocational certificate courses for free to people of the community, offering apprenticeship programs for students and producing talent at educational institutes and giving a quota for local talent to work;

(2) The sector-based approach focused on the demand side is the need of specific organizational skills by identifying skills and utilizing human resources through human capital management and development systems, such as having a specific pattern with the characteristics of talent, designing training programs associated with changing skills and knowledge, promoting learning in the workplace, encouraging psychological and physical needs and developing a career path.

As seen above, the workforce development practice of this research impacts on individuals, organizations and society. This is especially true in terms of the community and individuals and creates opportunities for employment and reduces qualification mismatch in educational institutes. In the future, building and developing a labor force in this sector by using the characteristics of the talent and the talent utilization programs could promote manufacturing companies to create a strong talent pool and to close the skill gap.

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