

Professional Identity of Indonesian VTS Operators

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The research aims to identify the attitude of Indonesian VTS operators toward their profession. Thus, it focuses on identifying several factors that affect the construction of their professional identity (PI) to understand better their reason for pursuing the job. The analysis is based on factors, i.e., self-image, social recognition, attitude toward change, professional competence, and expectations about the profession in the future. It employs a qualitative approach, using an open-ended questionnaire to obtain the data from 12 VTS operators who participated in a VTS supervisor training program. The results indicate that the participants have positive attitude towards their profession. Participants are found to demonstrate strong professional identity. The VTS operators are driven by their self-recognition, how they see their job as a calling instead of just a job. It is mainly shaped by the skills and efforts of the VTS operators reflecting their willingness and courage to embrace the profession.

KEY WORDS

- ~ VTS operator
- ~ Professional identity
- ~ Attitude
- ~ Profession

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1. INTRODUCTION

International Convention on the Safety of Life at Sea (SOLAS) 74/78 recognizes VTS as a navigational safety measure. SOLAS Chapter V (Safety of Navigation) Regulation 12 provides for Vessel Traffic Services and states that Vessel Traffic Services (VTS) contribute to the safety of life at sea, safety and efficiency of navigation, and protection of the marine environment, adjacent shore areas, work sites, and offshore installations from possible adverse effects of maritime traffic. The VTS should be able to interact with traffic and respond to traffic situations. International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) explicitly stated in the manual that VTS contributes to the safety of life at sea, safety and efficiency of navigation, and environmental protection within the VTS region by minimizing dangerous circumstances by providing timely and appropriate information on factors that may impact ship movements and help onboard decision-making (IALA VTS Manual Edition 8.2, 2022). In short, VTS manages ship traffic for safety and efficiency. Thus, the operators working at the VTS stations bear the same purpose and responsibilities on their shoulders when they are at work. IALA, as the regulating authority, is aware of this and has established a series of required training courses and the model course, i.e., V-103/1 VTS Operator Training; V-103/2 VTS Supervisor Training; V-103/3 VTS On-the-Job Training; V-103/4 VTS On-the-Job Training Instructor; V-103/5 The Revalidation Process for VTS Qualification and Certification.

The decision to establish a VTS station depends on the government's justification and assessment by following the guidelines provided by the International Maritime Organization (IMO). The government of Indonesia has seen VTS stations as required in certain areas and has established 21 VTS stations across Indonesia from west to east. These stations are located in Port of Belawan, Teluk Bayur, Dumai, Batam, Palembang, Panjang, Merak, Jakarta, Pontianak, Banjarmasin, Batu Licin,

Semarang, Surabaya, Balikpapan, Samarinda, Makassar, Benoa, Lembar, Bitung, Sorong, and Bintuni. All these stations provide Information Service (INS) and Navigational Assistance Service (NAS). As recommended by IALA in the VTS manual, the VTS personnel require special training and certification before they can operate at several levels. Following this guideline, the government conducted training and certification programs for the appointed VTS operators. So far, the types of certifications conducted were at operator and supervisor levels. The research was carried out during the supervisor training programs. 12 selected VTS operators were given the training to elevate their competence to the supervisor level. In addition, they were also taught Maritime English before they sat for the certification exam.

During the training, it was observed that the participants had various perceptions toward their job or profession as VTS operators. They were aware of the responsibilities they carried as they performed but did not necessarily feel qualified, thus, lack of confidence to serve their purposes of providing information and giving navigational assistance. This inquisitive thought led the researchers to conduct this research.

2. LITERATURE REVIEW

2.1. Previous Studies on VTS Operators

VTS, as a maritime traffic control system, has contributed to safe and efficient traffic management all over the world. The roles of VTS operators have been examined in recent studies due to the rapid changes in the maritime industry caused by technological advancement in terms of digitalization and automation. Kitada et al., (2019) conclude that human-automation and human-human coordination are critical for successful ship operation in the digital age. Relling (2020) also emphasizes human roles in the future maritime system in a recent study of VTS contributions, implying that humans can strengthen the system and will be responsible for the safe coexistence of autonomous and conventional vessels.

Furthermore, rapid technological developments in maritime transportation and shipping have an impact on ship-control paradigms. According to a study (experimental simulation study) conducted by Baldauf et al., (2019), navigation knowledge, safety and emergency procedures, operational procedures, global and regional rules and regulations, and COLREGS are required when communicating with vessels in the area. A Certificate of Competence as a Navigating Watch Officer, STCW requirements for watchkeeping officers, and IALA model courses for the VTS operators' training program are also required. In other studies, the connections, and interrelationships of individual components of the maritime transportation system are investigated, with a focus on shore-based infrastructures and potential changes in relation to human operators. Baldauf et al. (2021) suggest the

need for comprehensive research into the modernization and adaptation of MET schemes to ensure the necessary skills and knowledge of operators in the future maritime transportation system. In summary, all recent studies indicate the roles of VTS operators are fundamental to maintaining safe and efficient traffic management; therefore, operators must be provided with appropriate training and with professional qualifications.

In addition, we examined a number of studies on VTS operators that were evidently emerging in the Indonesian context. It is consistent with the increasing number of VTS stations in Indonesia during the past decade. Prior study reveals that the VTS station is vital to the safety and efficacy of shipping lanes in the Semarang region of Tanjung Emas Port (Dewantoro et al., 2019). The VTS service is crucial for all maritime zones because it can monitor any changes in ship location that could affect navigation. It covers those entering or leaving the port area, TSS (Traffic Separation Scheme) area, and the separation chart line for the separation of maritime traffic lanes. In a congested and narrow maritime path, such as when entering or leaving ports and straits, ships sailing in opposing directions are said to be in conflict. Additionally, another investigation was undertaken at a separate VTS site in Batam (Jamal, 2017). This study concludes that VTS operators influence the effectiveness of the implementation of VTS services by fulfilling their commitments to provide ship traffic information services within the allowed region. Due to the inability of VTS operators to comprehend navigation and a lack of English proficiency, the VTS still possesses a number of flaws and faces a variety of problems in terms of poorly planned services. In their study, Baldauf, Claresta, and Nugroho (Baldauf, Claresta, and Nugroho, 2020) conclude that the contribution of the VTS to safety, efficiency of shipping traffic, protection of the shipping environment, and the provision of valuable services to seafarers in the Sunda Strait is significant. The study emphasizes the importance of optimal procedures, cutting-edge technology, and trained VTS people, which have the potential to optimize the VTS system at Merak Port. The Merak VTS employees were taught using the IALA VTS 103 modules. However, not everyone has yet achieved this accreditation. The most recent research available on Indonesian VTS operators reveals that the introduction of VTS services at the Merak station followed conventional operating procedures. However, there are still problems with the implementation of VTS services in Sunda Strait waters, such as the fact that shipping companies and crew members do not fully comprehend the intent and purpose of the VTS in Sunda Strait waters and that not all VTS personnel have certifications demonstrating their knowledge and navigational skills (Syafaat, Sukmawati and Muh, 2020).

All the studies focus on the services provided by the VTS stations and what is missing from the operators, affecting the quality and efficacy of the expected service provided. The VTS operators are accountable for safely and effectively managing

traffic in harbors, rivers, and entrance areas. They direct port traffic, offer information upon request, and organize ship movement in emergent conflict situations. The job requires knowledge and skills, which the personnel found lacking. These knowledge and skills range from technical knowledge of navigation and its equipment to communication-related skills. They are provided in professional trainings for VTS operator developed by IALA, i.e., Model Course V-103/1 for VTS Operator (*Model Course V-103/1 Vessel Traffic Services Operator Basic Training, 1999*). The model course recommended level of English for this basic course is IELTS Band 5, Modest User, or the equivalent in similar testing systems (*Model Course V-103/1 Vessel Traffic Services Operator Basic Training, 1999, p. 19*). A higher level of English is surely implemented for VTS Supervisor certification based on Model Course V-103/2 for the VTS Supervisor. This requirement makes them more anxious about being the VTS operators. This study attempts to shift the perspective of studies related to the existence of the VTS operators. It investigates how the VTS operators perceive their job or profession as such and aims to shed some light on the profession and the entailed responsibilities through their lenses. To answer this question, we reviewed the formerly conducted research and theories deduced on perceiving a profession at personal and social levels. Thus, we consider the phenomenon from the perspective of our studies on the construction and development of professional identity.

These factors include self-image, social recognition, job satisfaction, social relations, attitude toward change, professional competence, and expectations about the profession in the future (Montemayorr et al., 2020). As a result, the success or failure of enlivening the profession can be determined by the criteria of the PI mentioned before. It also allows to discover characteristics that contribute to individuals or workers, notably the VTS operators, to stimulate their work. Furthermore, those who have effectively established their identity are expected to have a positive attitude, which can help them perform better.

2.2. Professional Identity

Identity is defined as being recognized as a certain "kind of person" in a given context (Gee, 2000). Each individual has multiple identities linked to their performance in the society. Therefore, identity is dynamic as it is built and shaped by action in interactions (Richards, 2006) rather than something that can simply be assumed or given a title. Among adults, professional contexts will factor their identity construction as they act and interact within their professional setting. This type of identity, as constructed in social perspective, is referred to as professional identity (PI) in this study. Pratt et al. (2006) reviewed several studies on the construction of identity to address the theoretical fact that individual identity changed according to the organizational contexts that surrounded them. The factors included career

progress or role transition, socialization in the organization, and the identity work where individuals actively constructed their identity in the social context of the organization, exercising their agency. Focusing on the career role transitions, Pratt et al. (ibid.) concluded that the comparison between the organization's expectation and the individual work behaviors stimulated the construction of professional identity.

Professional identity (PI) is an essential cognitive mechanism affecting people's attitudes and behavior in work settings and beyond (Caza & Creary, 2016). A systematic review of research on professional identity exposes that professional identity is a phenomenon simultaneously individual, social, and institutional. It results from the interaction between the psychological structures and the social structures of the individual throughout the course of life. This identity changes throughout time and as a result of work-related experiences. It involves the negotiation of personal, ego, and societal factors within a professional participant. (Cardoso et al., 2014; Kasperuniene & Zydziunaite, 2019). Strong identity has been associated with job satisfaction, defined by career planning and the attainment of predetermined objectives (Zhang et al., 2018). In addition, internal and external factors can either inhibit a person from adopting a PI or draw them closer to the center of the profession (Davis, 2006). Based on their review, Cardoso and her colleagues (2014) determine that there are three stages in the development of professional identity, i.e., the learning stage, pre-occupation stage, and professional stage. While these stages usually occur consecutively, the case is different with the VTS operators participating in this study. For these professionals, identity formation begins as they are assigned a status, progresses to an achieved professional with a position based on merits, and finally transforms into a managed professional (Cote & Levine, 2002).

This study utilizes seven dimensions of a strong PI to identify the VTS operators' attitude towards their profession. The dimensions are adopted from a recent study on medical educators' professional identity (Montemayorr et al., 2020), in which the professional identity comprises elements of self-image, social recognition, job satisfaction, social relations, attitudes toward change, professional competencies, and expectations about the future of the profession.

Self-image is their perception towards themselves within the social, emotional, and cognitive dimensions. It is an extrapolation from their past experiences to their imagined future. Social recognition is multifaceted and develops over time. It is influenced by the ideals the practitioners set in their working environment, with the ships in the traffic they serve and colleagues with whom they work. Job satisfaction is correlated to the desire to stay in or leave the profession. Social relations refer to belonging to a social group with similar traits and skills in the department where the operators work, in this case, their respective VTS stations. Attitudes toward change are how the VTS

operators react to changes in their functions and technological advancements in their work areas. Professional competencies involve various skills and abilities to work and operate as required. Finally, expectations about the profession's future are the aims and objectives they want to accomplish after a specific amount of time in the profession.

3. METHODOLOGY

For the purposes of the study, a qualitative approach to data collection has been chosen by using a questionnaire of open-ended questions structured to achieve the objectives of this study. The questionnaire was developed based on factors influencing PI constructions proposed by Montemayorr et al., in 2020. It includes all variables that influence PI construction and views, including self-image, social recognition, attitude toward change, competence, and future expectations for the profession.

A group discussion was also conducted after the participants completed their responses. All the responses were recorded in notes, then analyzed using narrative analysis involving structuring and organizing the stories. This allowed for more in-depth interpretation of the data, which was done to explain how and why participants constructed their identities in particular ways. Following that, not only were the factors influencing their PI's construction examined, but also the participants' PI, in order to gain a better understanding of the participants' attitudes toward their role at work.

3.1. Participants

Participants in this study were 12 VTS operators from 10 different VTS stations in Indonesia. They were selected as participants in V-103/2 VTS Supervisor Training and Certification. The data collection was conducted during the period of training.

Table 1.

Demography of participants in study.

Participants	Gender	Age	VTS Operator Employment	Prior position
1	Male	33	6 years	Coastal radio operator
2	Male	31	6 years	Coastal radio operator
3	Male	48	8 years	Coastal radio operator
4	Male	33	5 years	Coastal radio operator
5	Male	35	6 years	Coastal radio operator
6	Male	44	11 years	Not indicated
7	Male	42	4 years	Coastal radio operator
8	Male	34	7 years	Coastal radio operator
9	Female	40	6 years	Coastal radio operator
10	Female	45	13 years	Coastal radio operator
11	Female	36	8 years	Coastal radio operator
12	Female	38	7 years	Coastal radio operator

Almost all the participants, except one, were previously coastal radio operators before being designated VTS Operators. A coastal radio station is a radio station used for radio communication in shipping activities. A coastal radio station is mainly used for maritime communication. The operators are supposed to carry out operation planning, procurement, and supervision of aids to navigation, shipping telecommunications, sea observation activities, hydrographic surveys, and monitoring of flow and passage by using installation facilities for the benefit of safety at sea (Minister of Transportation Regulation No. KM 30 Year 2006 about the Organization and Administration of

Navigation District, 2006). From the discussion, their radio stations were apparently transformed and repurposed to be VTS stations. Inevitably, the radio operators have then been titled VTS operators. Although later in the study, it was found that not all the prior radio operators were assigned VTS operators. The employment duration listed in the table is the time they have served as VTS operators, excluding their preceding radio-operator duty. Gender distribution was still a typical figure in the maritime industry. There were predominantly more males (70%) than females (30%).

4. RESULTS

This section presents the findings about the components of the PI and its construction process. The participants' responses exemplify each element of professional identity using Montemayorr's framework.

4.1. Elements of Professional Identity

The study focuses on data analysis to determine the contribution of each factor influencing the PI, specifically self-image, job satisfaction, social relations, attitude toward change,

professional competence, and future expectations. We used these dimensions that were put in place to assess the effectiveness of the measures in determining a person's PI. The table below shows the results of the analysis, which rates the intensity of each factor's impact on the participants' professional identities.

The table implies that all dimensions appear to contribute to the participants' PI, particularly self-image, job satisfaction, attitude towards change, professional competence, and future expectation. Therefore, the following section will elaborate on how each dimension affects the participants' professional identity (PI).

Table 2.

Representation of themes in data.

Dimensions of professional identity	Dimension	Representation in the study	
	Self-image	10	83%
	Job satisfaction	12	100%
	Social relations in the department	5	42%
	Attitude towards change	12	100%
	Professional competence	12	100%
	Future expectation	12	100%

4.1.1. Self-Image

As Cote (2002) described it, identity formation started with professionals acquiring an assigned status. Accordingly, the result of this study indicated that initially, the participants perceived their job as calling (50 %). It inferred self-awareness and efforts to achieve the position. 25 % of the participants were appointed or instructed to be VTS Operators. It was evident that the institution played an imposing role. Another possible reason was that the institution recognized their skills better than the other radio operators. The latter can imply the influence and the impact that the appointment had on the social recognition factor.

"To be a VTS Operator, I must provide a number of certificates, such as IALA V103/1 VTS Operator Certificate and GMDSS General Operator's Certificate (GOC). Before working as a VTS Operator, I must be trained in specific knowledge of local VTS operational, geographical, and equipment-related procedures (On Job Training)." (DL-35, Calling)

"Since May 2016, I was being a VTS Operator in VTS Dumai after passed Operation and Maintenance Vessel Traffic System Malacca Straits course." (GL-33, Calling)

"I become as a VTS operator honestly by the orders of the head of the office, because the VTS at our place has been built and will operate soon." (NL-33, Imposition)

4.1.2. Job Satisfaction

According to the results, 92 % of the participants are satisfied with their jobs. Furthermore, most respondents responded positively that they are happy about and enjoy their job as VTS operators.

"I feel happy, comfortable and proud also because as a VTS operator I can talk with other persons every day and help them for getting information about the fairway and anything they need" (NL-33)

"So far, I feel happy, but I need to improve my skills, so I join the training V103/2 VTS Supervisor" (HL-34)

"I feel happy because I really enjoy working as a VTS operator." (FP-40)

However, 18 % of the participants are reportedly dissatisfied with their jobs. It is related to the main tasks that are considered too challenging to do.

"I feel it's a harder work than being a radio operator at the coastal radio station." (IP-48)

4.1.3. Social Relations

Based on the data, 58 % of the respondents remain absent from sharing their social relations. However, 42 % of the respondents showed a positive response toward social relations, in which the majority is indicated to possess a strong Community of Practice (CoP) (Wenger, 1998).

"So far, I'm happy to work as a VTS operator. the people where I work are kind and willing to work together." (DL-31)

"So far, so good. We have a good team and advanced equipment". (GL-33)

"My office environment very comfortable, and we always help each other" (NP-36)

4.1.4. Attitude Toward Change

It has been shown that a majority of 83 % showed a positive attitude toward change in their jobs. Meanwhile, 8.3 % remained neutral, and 8.3 % showed a negative attitude.

"My job is my source of growth. It helps me grow financially and intellectually" (DL-35)

An interesting response can be seen in the following lines. The participant showed self-awareness toward what needed to be done to cope with the job. Furthermore, the description of different feelings shows good mental health. Therefore, it implies that a positive attitude toward the present job is indicated by showing self-awareness to keep improving for the present position.

"I need to improve my knowledge and how to manage the traffic of the vessels with its regulation by giving good navigation aids services. ... happy if I can do the job, Sadness if I cannot solve the problem, Interesting if I get an experience and training about VTS operator" (AL-44)

4.1.5. Professional Competence

From the data acquired through the group discussion, it is evident that all participants agreed that English communication skills contributed to the success and the advancement of their performance at work. English skills enabled them to ensure information was delivered correctly and miscommunication avoided, which could have led to an accident or unfavorable situation. In addition, the majority further explained that joining training and courses helped them a lot to improve their abilities at work.

"I have been receiving the VTS operator training and now taking the supervisor training. Learning and training make me more experience about how to manage the traffic, provide the actual information and most important make me better for communication with another person" (NL-33)

"So far, so good (learning and training), and I really need to refresh my English" (QP-38)

"Especially at TSS in Lombok strait, there are many foreign ships passing or crossing there, so English communication skills are very important and necessary to avoid confusing information. (IP-48)

"Of course, English skills are very much needed by VTS operators in their work because every day, foreign ships come and go to Indonesian ports. And VTS operators must be able to communicate with foreign ships well to avoid miscommunication that can be dangerous for sailing ships" (DL-31)

4.1.6. Future Expectations

The most frequently cited expectation of the future was high income and the desire to contribute to vessel safety. For example, several operators expressed that they value the primary duties of the VTS operators to ensure safety for the passing vessels through proper communication with the VTS station, which is shared in the following responses:

"My expectation by becoming a VTS operator besides being able to provide services to ships off course to increase the salary, income and benefit" (NL-33_)

"I hope one-day VTS in Indonesia can be like VTS in other countries. from the side of salary and operator VTS ability" (DL-31)

"My expect by becoming a VTS operator is to contribute and enhance the safety of vessels and improve the efficiency of vessel navigation in Dumai VTS Area and to improve my knowledge, skills, and experience." (GL-33)

"My expectations are I hope I can contribute to my country when I join the Ministry of transportation and become a VTS operator. Besides that, I can help many people to improve safety, efficiency to navigate and prevent dangerous situations at sea." (HL-34)

"I just wanna be an expert in this job so that I can share my knowledge with my colleague" (NP-36)

"I hope I can make 0 accident at my fairway, especially on my watch." (QP-38)

5. DISCUSSION AND CONCLUSION

There are seven factors influencing the construction of the PI: self-image, social recognition, job satisfaction, social relations, attitudes toward change, professional competence, and expectations about the profession's future. In this article, the analysis of social recognition is embedded in self-image because most participants did not choose the profession. Instead, they were assigned or appointed VTS operators by a higher authority. Their position is gained by the acknowledgment from the institutional community, particularly based on their English

ability. English skills and their previous experience as coastal radio operators were the basis of their current positions at VTS stations. This certainty is in line with what Richards (2006) concluded that what is professionally achieved is also linguistically achieved. The identities that emerge from engagements with daily business are as much linguistic as professional (ibid.). Evidently, it is applied not only among teachers but also among other professionals. During the course of their career, they started to embrace it as part of their lives. They found satisfaction in the profession primarily for salary and the desire to contribute to the field of VTS communication. They turned their competence in English into part of their professional identity. Furthermore, as they progressed in this career, they gained further economic capital and eventually improved their social status.

The overall analysis indicates that the participants of this study have a positive attitude towards their job as VTS operators. It also implies that they have a strong PI as characterized by the contributing factors mentioned above. Firstly, their self-image is driven by their self-recognition. It is how they see the job as a calling instead of only a job to earn money. It is mainly shaped by the skills and efforts of the VTS operators, which reflect their willingness and courage to understand the profession. Secondly, it is driven by job satisfaction, a positive attitude toward change, and sufficient professional competence. In addition, the VTS operators' future expectations are mainly not the salary but personal growth and dedication to their job, which indicates a strong identity as they enliven their job by wanting to do better for a better safety and services. Finally, although social relations could not be identified thoroughly, the contribution of strong CoP towards the PI was detected. As a drawback, in terms of professional competence, the result indicates a lack of ability for English communication among the VTS operators. However, they show a positive attitude towards learning the language for work. This finding is in the same light as Pratt et al. (2006) suggested that the perceived competence and performance of the individual would factor in the construction of professional identity.

All factors influencing the construction of the PI are proven to contribute to a solid PI. A strong PI is characterized by an individual's self-awareness toward the profession and CoP, which contributes to strengthening the PI towards the profession as a VTS Operator. The research concluded that the VTS operators had reached the stage where they had enlivened their job. However, their professional competence needs further improvement, enhancing their strong PI (Caza & Creary, 2016). The VTS operators have to master English communication skills, as their job is to deal primarily with communicative practices.

Identity is a complex concept to define because it is both personal and social. This study examines one facet of social identity from a work-related perspective in a relatively brief

amount of time. As a result, it leaves room for future research to collect data through in-depth interviews and response analysis, as advised, in most identity studies.

CONFLICT OF INTEREST

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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