International Journal of Entrepreneurship, Business and Creative Economy Vol. 3 No. 1 (2023) https://doi.org/10.31098/ijebce.v3i1.739

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Research Paper

Smart Personality Development Model in Software Developer

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Received : November 4, 2021	Revised : December 30, 2022	Accepted : January 3, 2023	Online : January 31,2023

Abstract

In this Industry 4.0 era, digital facilities are used by companies from all fields. In this digitalization development era, there are more software development companies established to offer software development services. It makes software developers an increasingly popular job today. In order to get qualified software developers, companies need to identify the smart personality of software developers. A smart personality is very useful for knowing the company's needs in determining the criteria for prospective software developers. This research aims to analyze the development of smart personalities in software developers. Data in this research were obtained using the descriptive qualitative research method and through in-depth interviews. The data collected were analyzed by thematic analysis in accordance with the results of the interviews. Based on the results, it can be concluded that a software developer with a smart personality has the following characteristics: they do not have to be good-looking, they have to be well-skilled in their field, have strong/good logic, have good analysis skill, and can do coding neatly and carefully. The main smart personality types that can make a software developer good are they have to be well-skilled in their field, having strong/good logic, and having good analysis skills.

Keywords *Personality, Smart Personality, Software Developer, Software Development*

INTRODUCTION

In this era of Industry 4.0, the use of digital facilities is favored by all areas of the company. This is used as one of the company's strategies to face the digitalization era so as not to be left behind by competing companies. Of course, with the development of this digitalization era, more and more software development companies are now moving forward to offer software development services. This makes many professions as software developers, increasingly in demand today.

In a software house, software development activities include system analysis, design, coding, and testing involving software developers (Ahmed et al., 2013). Software developers do not only consist of programmers but also other divisions such as UI/UX designers, system testers, project managers, and many more, depending on how many divisions the company wants to divide. In this study, the software developers who were engaged in interviews focused on people who have professions as programmers and UI/UX designers. Software developers act as core contributors to a project having authority over the code base, reviewing external code contributions, and guiding newcomers (Calefato et al., 2018).

This study reviews how software developers are said to have smart personalities. Software development has complex dynamics, namely the complexity of the human personality, which is often ignored and should not be ignored (Calefato et al., 2018). To develop good-quality software, the software developer's life cycle needs to be defined systematically (Iqbal et al., 2019). Humans can be said to be the main tool in developing any software development project. The success of a software development project is not only on the technical skills of a software developer but also on the personality of a software developer (Sodiya et al., 2007).

In the process of selecting and developing employees in the company, a personality

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assessment is something that is usually done (Hastuti et al., 2017). Considering personality can be one way to study the effectiveness of software developers more closely (Endriulaitiené & Cirtautiené, 2021). This is because actions, feelings, thoughts, and consistency are formed through the personality, and the personality of each individual is different, which makes each individual has a different attitude and temperament (Gilal et al., 2017). The personality of the software developer is very likely to affect the results of the software development project. This is because the application of the method or modeling technique used is based on the perspective and abstraction that occurs in the software development lifecycle, which is influenced by the personality of the software developer (Soomro et al., 2016).

Every individual needs intelligence as a developer of a smart personality. The intelligence possessed by each individual has the meaning of intelligence that is able to develop the individual (Suryanto, 2019). An increase in the ability to handle various tasks using and understanding technology is also part of intelligence because being smart is not only about individuals who have intelligence, critical thinking, logical reasoning, and a scientific approach. The quality of smart people can also be assessed by how open-minded an individual is, how flexible he is in adapting to a changing environment, and how creative he is in contributing to education. This is because smart people will play a role in public life and have a democratic nature (Gupta et al., 2017).

Based on this condition, this study aims to analyze the development of smart personalities in software developers, and some research questions were made as presented in the following part:

1. Is a smart personality software developer judged by how good-looking the software developer is?
2. Is the smart personality software developer judged by the skill of the software developer in the field? If so, what skills are needed?
3. Is the smart personality software developer judged by his analytical ability to be able to translate programming languages into human languages?
4. Can a software developer's smart personality be judged by how the software developer represents his/her workplace?
5. What kind of smart personality development model has been implemented in your office?

By conducting this study, it is hoped that the result can have a further impact on the development of a smart personality which contributes both managerial and theoretical.

LITERATURE REVIEW

Human senses are not sufficient to understand the human condition. Humans are different from one another. This is because humans have their own uniqueness (Hadinata, 2018). Personality is a pattern of the permanent relativeness of a character and the consistency given by the uniqueness of the character, as well as individual behavior (Nareswari et al., 2021).

Currently, the software industry is experiencing an evolution that requires paying close attention to personality trends in the profession, specifically the consideration that software developers have a role in benefiting from individual awareness in making improvements to their soft skills so that they have an influence on their performance. This is related to the growing relationship between human resource management and software development which has continued to increase since the 1980s. It then causes motivation to understand personality traits and the influence of any social factors related to software development (Varona et al., 2012).

An important debate between academia and industry highlighted that information mediated by abilities and decisions made by individuals are influenced by their personalities (Barroso et al., 2017). Since the 1960s, the focus of research in software engineering has focused on how individual personalities influence task and team performance. The personality possessed by a software developer is very influential in how a programmer completes their tasks. This is

because personality has the nature of individuality, and the identity of a programmer is an important factor in completing tasks since programming is very complex work. Other than that, how programmers have an individual work styles is based on the role of personality variables (Soomro et al., 2016).

In this study, there is still no definitive definition of personality despite the many developments in theory. This is because one's personality is different from another. In the field of psychology, personality is used as a tool to study human behavior through the identification and differences possessed by each individual. The individual has three personality traits that generally exist in every individual, namely that each individual person has their own uniqueness, still has stability in all situations and circumstances, and has things that act as a control of his behavior (Soomro et al., 2016).

Personality tests are mostly used as a tool to identify the differences that exist in the software engineering sphere. The tool that is often used as a test is a personality test in a projective and objective manner. Projective tests are useful for determining the value of a person's personality in the context of responding to something that is ambiguous; thus, a person can respond according to their inner character. In contrast to the objective test, this test is used as a personality assessment based on an assessment questionnaire by assuming the respondents are in a conscious state (Cruz et al., 2014).

Due to the task of software developers, which sometimes requires teamwork to meet the needs of clients, the use of personality types has started to be recognized, and its use has begun to increase because it can help teamwork accuracy. With this, it is expected that with optimization in determining the personality of software developers, the performance of software developers will improve. The software developer's way of thinking usually has a realistic point of view and respects the facts so that they can make decisions objectively (Omar et al., 2015).

The personality traits that exist in each individual need to be overcome if they have a bad impression. This is because if the personality has a negative factor, it will affect the mental and physical health of the individual. Companies or organizations that achieve success depend on how their employees handle and manage the completion of their tasks. Therefore, companies must pay close attention to the personality of their employees because this has many impacts on the company's journey. It needs a solution to overcome a problem so that each individual can understand their respective personalities, which later can lead to better company performance (Gridwichai et al., 2020).

In the individual's workplace, personality traits have an influence due to the existence of role ambiguity, conflict and workload, and working time which are the main factors influencing work performance. This is because the workload and pressure obtained can be one of the factors in the formation of an individual personality (Gridwichai et al., 2020).

RESEARCH METHOD

Draft

This study used a qualitative approach and descriptive-analytical method functions to convey an overview of what the data is and draw conclusions to the public (Sugiyono, 2009).

Participant

The participants in this study were software developers who worked in software house companies or companies that were not focused on IT product output. The selected participants were software developers who had a minimum of almost two years of experience. It is assumed that software developers understand how their roles and functions are from experience gained during work. The data was collected using in-depth interviews.

Data Analysis

This study used thematic analysis, where this analysis is carried out based on interesting themes as outlined in the narrative report (Sugiyono, 2009).

Significance

Research on the quality of a good software developer with a smart personality needs to be explored to develop the company, especially the software house, so that it can better manage the software developers owned in the future.

FINDINGS AND DISCUSSION

The results were obtained from several questions in the interviews. The questions used were related to appearance, skills, representation, and development models. The following is a list of questions:

1. Is a smart personality software developer judged by how good-looking the software developer is?
2. Is the smart personality software developer judged by the skill of the software developer in the field? If so, what skills are needed?
3. Is the smart personality software developer judged by his analytical ability to be able to translate programming languages into human languages?
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Through these questions, various interview results were obtained from each informant. The answers given by each informant were based on their experience while working as a software developer. From these experiences, they could give opinions objectively based on real experiences. The following are the results of interviews with informants:

The smart personality of a software developer is not judged by how good-looking the individual is. The appearance of the software developer does not become a concern or is included in the general standard category, which is free and neat. This is in line with what was conveyed by informant A in an interview, who works as a UI/UX designer at a software house company.

"As a UI/UX designer, there are no special clothes to wear, the clothes you use are free to be neat, but there are times when you have to wear a collared shirt on formal agendas, such as meetings"– SZR

The same thing was said by informant B, who works for an insurance company as an IT staff with the task of Fullstack Developer. Informant B said that appearances did not really matter because the role of software developers was mostly behind the scenes.

"The appearance of the IT staff uses the office dress code, and there are no special rules in appearance, as long as it is neat enough because we work behind the scenes." – B

Smart personality in software developers is determined by skills in their field; for example, in UI/UX, designers must be able to understand the elements of their own design. It means that a programmer does not have to be good at programming skills, but they have to have good logic. This is in line with informant B, informant C, who worked as a UI/UX designer at a start-up company, and informant D, who worked as a web developer at a well-known herbal medicine company.

"Pro programming skills are not really needed, but strong logic is more needed." – C

"A software developer must prioritize logic or have good logic. As a UI/UX designer; you must understand the elements of your own design; the design must be easy to use, simple, and informative." – DI

"I only need to know the basics and understand how to use them. So it's more about understanding how to apply it than just understanding and prioritizing logic." – FOH

In addition, smart personality software developers can be judged by how software developers can translate coding into human language, do coding neatly and carefully, and have good analytical skills. This is as stated by informants A, C, and D below:

"A software developer must have good analytical skills so that he is able to explain and translate the coding that is done into human language." – SZR

"Software developer analysis skills are prioritized for Front End developers; Back End developers or programmers only need about 70%. Then, the software developer who acts as the back end must be able to code neatly to make it easier for other programmers when working in a team." – DI

"Analysis skills are needed by software developers to solve problems and make their thoughts objective, not subjective. Software developers must also be careful and smart because if they are not careful, for instance, if they don't type ';', the code will not work. Meanwhile, if you are not smart, you cannot do problem-solving quickly." – FOH

Software developers have a role in representing the company where they work. This is because the output of software development affects how the company's image. Informants A, B, and C said regarding this:

"What represents the software house, whether or not it is good or not, is the result of the work of the software developer." – SZR

"Software developers only represent a certain percentage if the company does not run as a software house." – C

"Software developers represent the software house from the output. If the output is bad, there are many bugs, the UI design is bad, and the image of the software house is considered bad." – DI

To develop a smart personality, some software developers have received facilities from the company where they work, especially those who work in software houses. They get some training funded by the company and some routine activities that become the company's work culture. However, companies that are not specialized in software houses still pay less attention to the development of smart personalities. The following was said by informants A, B, C, and D during the interview:

"There are several concepts of smart personality development in the office, such as participating in training, challenges with deadlines and prizes, as well as sharing knowledge every week to find out what each other is doing or new knowledge being carried out by cross-divisions. It is also an effort to

train public speaking and a means of exchanging ideas." – SZR

"Smart personality development in the office is not given much attention because it is basically not a company that focuses on IT." – C

"Efforts to develop smart personality in my office are in the form of training and webinars and implicit knowledge sharing." – DI

"The training depends on the interest of the software developer, and it is only a supporting effort in developing a smart personality, not a major improvement. As software developers work, their smart personalities will increase. If you work in a large company, your smart personality will narrow down to just one skill over time. Meanwhile, if you work in a small company, your smart personality can spread to various skills." – FOH

The application of efforts or the concept of developing a smart personality in every company that has an IT team or software developer is carried out in the middle of the working period or whenever needed.

CONCLUSIONS

Based on the research results, a software developer who has a smart personality has the following characteristics: (1) good looking is not necessary, (2) good skills in his field, such as UI/UX designers that must be able to understand the elements of their own design, (3) strong/good logic, (4) good analytical skills so they can translate coding into human language, (5) can do coding neatly, making it easier for other programmers to work as a team, (6) be careful because if you are not careful, there is a slight deficiency in coding that will cause errors. In addition, the development of smart personality in software developers is carried out starting with training, webinars, and challenges that give rewards and knowledge sharing.

The main smart personality types that can make a software developer good are they have to be well-skilled in their field, having strong/good logic, and having good analysis skills. Software developers who have not received facilities for smart personality development seem to actively propose initiatives to obtain these facilities to develop better smart personalities in the future. Companies that have not implemented efforts or the concept of developing smart personalities in their software developers are expected in the future; they will pay more attention to this so that software developers can produce good output.

ACKNOWLEDGEMENT

The authors would like to thank Nataly Perez as proofreader, Xerpihan.id as a translator, and AJ as English coach.

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