

An Organization DNA Model: UiTM in Analysis

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Abstract: This study focuses on Universiti Teknologi MARA (UiTM), highlighting its academic success and strong employee character. It aims to identify employees' trust in the institution and analyze the data using qualitative content analysis. Three data sources were used: an interview with the former Vice-Chancellor, an exploratory survey with 187 respondents from various categories, and secondary data from the Vice-Chancellor's speeches and writings. Methods included content analysis, exploratory data analysis, and word frequency analysis. The study draws a comparison between UiTM's organizational structure and DNA, where the backbone represents "Nation (Bangsa), Knowledge (Ilmu), and Success (Berjaya)," and the nitrogenous bases symbolize "Thinking (Pemikiran), Emotions (Emosi), Spirit (Semangat), Aspirations (Aspirasi), and Behavior (Tingkah laku)." These elements form the PESAT model, which encompasses the core components of UiTM's identity. The research contributes by offering a framework for managing large institutions like UiTM, ensuring a sustainable identity, and guiding future aspirations. This model provides valuable insights into the institution's community and its continued development.

Keywords: *Organizational DNA; Variation; DNA structure, content analysis, organizational identity*

1. Introduction

Deoxyribonucleic Acid (DNA) is the primary chemical component of chromosomes and the substance responsible for producing genes (Saenger, 1984). Inspired by the biological concept of DNA as a hereditary molecule that carries essential instructions for life and continuity, this study applies the DNA metaphor to develop a model representing the collective identity, values, and institutional legacy of UiTM's community. Encouraged by this definition, a study was conducted to establish a DNA Model representing the heritage of UiTM's community, including both staff and students, as a family within the institution. High-quality staff and civil servants are vital assets to the success of any organization and nation (Megat Ayop Megat Arifin & Abd. Halim Ahmad, 2016). Universiti Teknologi MARA is renowned for its contributions to higher education and has produced numerous notable figures on both national and international levels. From the perspective of biological epistemology, DNA is a nucleic acid containing genetic instructions essential for the formation and development of all living things (National Human Genome Research Institute, 2014)

The concept of DNA can also be applied to the DNA of an organization to ensure its survival as a living entity, akin to the definition of DNA. Many organizations face challenges not due to the absence of rules but because of a lack of a compliance culture. Without compliance, the organizational culture may not align with the objectives to be achieved (Kurnia Hadi, 2021). Currently, UiTM lacks a model that represents its organizational DNA, which could serve as a reference for human capital development and as a guideline to strengthen the organizational structure in alignment with its vision and mission. As a large entity, UiTM's organizational structure is integral to its functional effectiveness. Often, organizations face a disconnect between strategy and implementation, leading to confusion, failure to meet goals due to a lack of commitment, duplication of efforts, ambiguity in decision-making, and internal conflicts (Lozano, Gomez, and Rositas, 2012). This misalignment results in disorder and ineffective strategies, which ultimately affect the achievement of objectives and outcomes.

In this scenario, civil servants at UiTM, as a public sector organization, need a cohesive organizational DNA that

transcends service schemes and ranks. They must cultivate a sense of unity and responsibility towards the trust placed in them. This sense of togetherness and accountability is crucial for ensuring that the reputation of the public service remains elevated and is continuously upheld (Mohd Khairul, 2020).

Two objectives will be achieved through the implementation of this study, namely:

- To identify the heritage DNA of UiTM denizens who have a soul for UiTM.
- To analyze the gathered data by using a qualitative method.

This research is significant due to the strong connection between practicing good values at UiTM and forming the institution's DNA, which can contribute to empowering the university to excel. The results are expected to serve as a reference and guide for UiTM denizens, enhancing their morale and commitment to the organization.

2. Literature Review

For this research, several key terms are crucial for guiding the study, as they are interrelated. Among them are:

Deoxyribonucleic acid (DNA)

DNA is a fundamental component of life, containing biological instructions that define an individual's traits and personality (Harrow et al., 2019). This genetic information is transmitted from one generation to the next through reproductive processes (Lamm, 2012). A DNA molecule is structured as a double helix composed of two strands of nucleotides connected. Each nucleotide includes a nitrogenous base, a sugar (deoxyribose), and a phosphate group. The four nitrogenous bases—adenine (A), thymine (T), guanine (G), and cytosine (C)—form the genetic code for all DNA strands, regardless of their origin. Adenine pairs with thymine, while guanine pairs with cytosine. These base pairs connect at the core of the DNA helix. The backbone of each strand consists of deoxyribose and phosphate groups, with the phosphate group of one nucleotide binding to the carbon number three of the ribose in the next nucleotide. The helical structure of DNA is stabilized by hydrogen bonds between the base pairs (Rizzaak Aynur Nugroho, 2019).

Organizational DNA

Organizational DNA helps establish and maintain an organization's identity (Groysberg et al., 2018), which encompasses its culture, values, and purpose. A strong, relevant, and rational organizational DNA influences the employees of the organization in their actions and strategic endeavors. The DNA of the organization is defined as the core value conveyed by the founder or shareholder to the organization and all employees to be socialized and internalized to ultimately form the corporate culture as expected by the founder or shareholder of the organization (Fahmi, 2012). DNA and corporate culture help differentiate the behavior in an organization and the behavior of employees through collective characteristics and values. Organizational DNA also means the underlying factors that define the organization's "personality" and help explain its performance. This is made possible as organizational DNA fosters a sense of solidarity and coalition among its employees (Korda & Rachmawati, 2022). Pehlivanoglu & Köse (2020) and Groysberg et al. (2018) found that strategic initiatives that not only align well but also represent the organizational DNA would influence employees' participation, motivation, and commitment. Research by PricewaterhouseCoopers (PwC) highlights that organizations often fail in implementation due to their focus on structural reorganization while overlooking key drivers of effectiveness, such as decision-making rights and information flow (PwC, 2014). Similarly, just as the human body maintains organ function despite periodic cellular changes, an organization's structure can remain functional even as its elements evolve. This "DNA network" is what differentiates living organisms and organizations.

In the context of Malaysian universities, leveraging organizational DNA engages their community, including academic staff, administration, and students. A well-defined DNA attracts academics, encourages students to further their studies, and fosters collaboration with external partners (Chan, Wong & Wok, 2017). UiTM, as a higher education institution, retains its core function despite changes in organizational structure and staffing. Therefore, the DNA of the organization represents its self-identity, guiding strategic decision-making, shaping the learning environment, cultivating innovation, and fostering collaboration both within the university and with external stakeholders (Korma et al., 2022). This self-identity sustains the structure and system of UiTM.

Variation

The term "variation" refers to the differences or diversity that make something distinguishable from another. In biology, these abnormalities arise from variations in the DNA network of individuals or populations, influenced by genetics, environment, and the interaction between the two (Vihinen, 2018). From an organizational perspective, such variation depends on the scope, purpose, and leadership that have shaped the organization over time. This is reflected in the organizational DNA, which represents the heritage and identity distinguishing one organization from another. UiTM, as part of the educational institution class, contributes to the diversity among such institutions through its distinctive identity. An organization can typically be identified through visible characteristics like its name or logo, and the heritage identity of an organization plays a crucial role in its uniqueness and overall appearance.

Strategic management and organizational culture

Over the past five years, scholars have increasingly underscored the symbiotic relationship between strategic management and organizational culture, showing how culture shapes strategic efficacy and innovation. For instance, Panda (2022) reveals that collaborative, advice-seeking, and error-management cultural traits significantly strengthen the formulation and conceptualization of strategic plans in nonprofit organizations. Alwan (2023) further demonstrates that an organization's strategic cultural structure closely aligns with superior performance outcomes. In the business-to-business digital transformation domain, Orero-Blat et al. (2022) develop a compelling case that a "digital culture"—characterized by openness, agility, and data-centric decision-making—is a critical antecedent for both strategic digital transformation and big data analytics capabilities. Similarly, Wiese et al. (2024) find that developmental cultures notably boost the deployment of Industry 4.0 technologies, reinforcing the idea that culture underpins strategic technology implementation. Collectively, this recent literature highlights that strategic management both shapes and is shaped by organizational culture, establishing culture not merely as context but as a dynamic driver of strategic success.

3. Research Methodology

The methodology for the formation of the UiTM DNA framework model involves six phases, which are: Phase 1: Problem and Research Objective Identification, Phase 2: Data Collection, Phase 3: Data Analysis, Phase 4: Model Formation, and Phase 5: Model Formation Validation. However, this paper will only cover up to Phase 3, as some processes in the later phases are yet to be completed. The subsequent sections will describe the methodology of each completed phase in detail, providing insight into the progress of the study.

Phase 1: Problem and Research Objective Identification

A brainstorming session was conducted to establish a reference point for determining whether an organizational DNA model exists within UiTM. This process was crucial in avoiding duplication and redundancy, which could complicate the formulation of organizational strategy (Roetzel, 2019). Additionally, a literature review of previous research on organizational strategy and institutional DNA was carried out. The goal was to identify key characteristics or elements necessary for an organizational DNA framework. This review allowed for comparison with existing work process models, guidelines, and policies to see if any fit the concept of organizational DNA.

The investigation revealed that UiTM lacks cohesive organizational DNA. The existence of random decision-makers and policy executors, along with input from long-serving UiTM denizens, reinforced the problem definition. This validation confirmed that UiTM has yet to develop a clear organizational DNA model that can serve as a guiding reference for its denizens, ensuring the institution's values are upheld and emulated.

Phase 2: Data Collection

Clearly outlining ideas and inspiration helps facilitate a positive and productive work culture, which can be embraced by subordinates. A positive work culture embodies a strategic philosophy that endures even with changes in leadership or personnel. With this concept in mind, primary data was gathered through open-ended interviews with former UiTM Vice-Chancellors. The rationale behind this approach was their ability to:

- Provide leadership insight and aspirations for the institution.
- Reflect on their achievements based on the strategic plans implemented during their tenure.

- Share their perspectives on how the institution may have evolved or remained consistent since their departure, including governance, traits, and values.

In addition, documented publications were sought to embody the ideas and thoughts of UiTM's leadership, which are typically conveyed to the university's denizens. Speeches delivered by His Excellency Tun Dato' Seri Utama Dr. Haji Arshad Ayub and memoirs published by previous Vice Chancellors were identified as valuable resources for understanding UiTM's leadership philosophy and strategic direction.

Phase 3: Data Analysis

This study employed a qualitative data analysis methodology, which involves working with data, organizing it, breaking it down into manageable units, synthesizing it, and looking for patterns to identify important insights. According to Bogdan & Biklen (1982), qualitative data analysis is a systematic process for managing and displaying research findings clearly and understandably. Two key methods were used in this study: content analysis and word frequency analysis.

Content analysis was utilized to examine interview transcripts and secondary document sources. Data was organized into relevant categories and themes through an inferencing process (Creswell, 2007). Although several approaches to qualitative content analysis exist (Hsieh & Shannon, 2005), this study employed the deductive content analysis method. Deductive content analysis (Kyngäs & Kaakinen, 2019) uses data codification based on prior knowledge or assumptions. In this case, the themes for analysis were predetermined from brainstorming sessions and information gathered in Phase 1. Keywords and phrases were extracted from the interview transcripts and secondary documents, then codified based on the identified values, which reflect ways of thinking, attitudes, and aspirations.

Word frequency analysis was used as a complementary method to provide a frequency distribution of words. This involved processing both online and local content to identify how often certain words appeared. Cloud graphics were generated to visually analyze the most frequently used words (Dicle, Mehmet F., and Dicle, Betül, 2018). Word frequency analysis offers a simple and visually attractive method for interpreting textual data and is often used to provide an overview by highlighting the most frequent terms in each text.

4. Results

The following section discusses the results for each of the phases by the research methodology described earlier.

Phase 1: Problem and Research Objective Identification

The first task in this phase was to identify the research problem and objective. Through a comprehensive literature review and random interviews with top management, it was confirmed that UiTM does not yet have a formal model representing the DNA of its denizens. This model could serve as a reference for the university's core values, strategic direction, and organizational identity. Such a model would help consolidate the values and practices upheld by UiTM over the years and provide a foundation for institutional growth and coherence.

Phase 2: Data Collection

For this phase, data were collected primarily through interviews with two former UiTM Vice Chancellors: YB Senator Prof. Emeritus Tan Sri Dato' Seri Dr. Ibrahim Abu Shah and Prof. Emeritus Dato' Dr. Hassan bin Said. These interviews provided valuable leadership insights and reflections on the institutional strategies implemented during their tenures. Additionally, secondary data was obtained from documented speeches by His Excellency Tun Dato' Seri Utama Dr. Haji Arshad Ayub, preserved in the UiTM Archive Collection. Memoirs written by previous UiTM Vice Chancellors were also reviewed, offering an in-depth understanding of their thought processes, emotions, aspirations, and behaviors towards the success of the institution. These memoirs provided a rich narrative of UiTM's historical and organizational journey. The selected memoirs are:

- *Mencorak Destinasi by Professor Emeritus Tan Sri Dato' Sri Ir. Dr. Sahol Hamid bin Abu Bakar*
- *Falsafah Mim: Membina Minda Melayu by Professor Emeritus Tan Sri Dr Ibrahim Abu Shah*
- *Ibrahim Shah: Menyingkap pengurusan universiti by Professor Emeritus Tan Sri Dr Ibrahim Abu Shah*

- *Syahadan: Menyingkap 5 nilai-nilai murni untuk sukses by Professor Emeritus Datuk Ir. Dr. Mohd Azraai Kassim*

Phase 3: Data Analysis

In this phase, the research team began identifying components from the data collected in Phase 2. Components were further developed through brainstorming sessions and analysis of UiTM archival materials. The concept of organizational DNA, which centers around thinking, attitude, and aspiration, served as a guiding hypothesis. During the coding process, subcategories began to emerge, expanding upon the initial hypothesis.

Coding revealed that the attitude construct encompasses various themes related to emotions, spirit, and behavior. This led to the formulation of the acronym PESAT, which represents the following components:

- Pemikiran (Thinking)
- Emosi (Emotions)
- Semangat (Spirit)
- Aspirasi (Aspirations)
- Tingkah laku (Behavior)

The PESAT model encapsulates the internal and external values practiced by the university. It is hypothesized that these constructs reflect the unique identity of UiTM, setting it apart from other universities.

To further validate the PESAT hypothesis, the research employed a concept mapping method using affinity diagramming. This method organizes language data (e.g., quotes, ideas, and opinions) into groups based on their relationship and structure (Hartson & Pyla, 2012; Lucero, 2015).

To build a relationship diagram, the following steps were undertaken:

PESAT Definition Draft

An initial definition of the PESAT components was drafted to enable researchers to map the collected language data objectively. This definition is considered provisional, open to refinement as the content analysis progresses. At this stage, the PESAT concept is still a hypothesis requiring further validation. The initial draft of PESAT's definition is presented in Table 1.

Table 1: PESAT Definition Draft

Components	Definition Draft
P = <i>Pemikiran</i> (Thinking)	Language data shows the form of thinking that must exist in UiTM denizens. It concerns denizens' traits in framing ideas, solving problems, and approaches undertaken in bettering oneself and other stakeholders.
E = <i>Emosi</i> (Emotion)	Language data that show feelings guided by conscience that have not yet been nurtured, but are, on average, present in UiTM residents. It also looks into feelings that are steered by religious beliefs and philosophies.
S = <i>Semangat</i> (Spirits)	Language data shows the feeling or pneuma in the form of positive will and determination. It should reflect self-pneuma and the reflection of spirit to surrounding stakeholders, to set oneself apart.
A = <i>Aspirasi</i> (Aspiration)	Language data reflects the ambition and expectations of UiTM leaders towards UiTM denizens. It also looks into the ideas that UiTM denizens would have of themselves within the community and nation.
T = <i>Tingkah laku</i> (Behavior)	Language data shows the internal and external attitude of UiTM denizens. It shows how one should conduct oneself and the surrounding community.

Referring to Schein's model (2010) divides organizational culture is divided into three levels, which are:

- Artifacts (visible structures/processes)
- Espoused Values (strategies, goals, philosophies),
- Basic Underlying Assumptions (unconscious beliefs, perceptions, thoughts).

In which the PESAT model - *Pemikiran* (Thinking), *Emosi* (Emotion), *Semangat* (Spirit), *Aspirasi* (Aspiration), *Tingkah Laku* (Behavior) are mapped closely to Schein's second and third levels. This can be shown where

Pemikiran and Aspirasi reflect espoused values that guide UiTM members in how they conceptualize leadership and personal development, whereas Emosi and Semangat likely align with basic underlying assumptions, such as how feelings and spiritual motivation are integrated into UiTM's identity. The PESAT model aligns with Schein's (2010) levels of organizational culture, particularly in expressing the university's espoused values and underlying assumptions that shape behavior and identity.

Other than Schein's model, Hofstede's Cultural Dimensions (2020), which consists of six dimensions, was also referred to in the PESAT modelling. The six dimensions of Hofstede's Cultural Model are as follows:

- Power Distance
- Individualism vs. Collectivism
- Uncertainty Avoidance
- Masculinity vs. Femininity
- Long-Term Orientation
- Indulgence vs. Restraint

The emphasis on Emosi guided by conscience and religious beliefs (Emotion) and Semangat (spirit of positive will and determination) reflects high Collectivism and high Power Distance, both of which are commonly found in Malaysian organizational culture. The aspiration to "better oneself and other stakeholders" (Pemikiran) and "ideas that UiTM denizens would have of oneself within the community and nation" (Aspirasi) align with **Long-Term Orientation** and Masculinity (achievement-driven). The cultural attributes defined in PESAT, such as hierarchical leadership, collective identity, and religiously influenced emotional regulation, are consistent with Hofstede's dimensions, particularly high-power distance, collectivism, and long-term orientation (Hofstede Insights, 2020).

Note Writing

In the note-writing stage, quotations, ideas, opinions, and various language sentences from the interview transcripts and texts were recorded on post-it notes, each representing an affinity note. This process, guided by the draft definition of PESAT (as detailed in Table 1), produced approximately 250 related notes. To ensure an unbiased collection of data, no color schemes were used to categorize the notes, which helped avoid undue influence over the language data. The primary focus at this stage was to accurately transfer the language data from the transcripts into Relationship Notes, without imposing any preliminary categorization or analysis.

Note Grouping

For the note grouping phase, a dedicated room at the Institute of Malay Thought and Leadership (IMPAK), UiTM, was utilized. This room was selected for its spaciousness, ease of movement, and wall space suitable for hanging groups of notes based on the PESAT components. Reserved for one week to avoid disturbances, the room facilitated an effective organization of the data, in line with the recommendations by Holtzblatt, Wendell, and Wood (2004), which emphasize the importance of a conducive environment for constructing relationship diagrams.

In this phase, Mahjong paper, each representing one PESAT component—Thinking (Pemikiran), Emotion (Emosi), Spirit (Semangat), Aspiration (Aspirasi), and Behavior (Tingkahlaku)—was labeled accordingly. A total of five Mahjong papers were used. The Relationship Notes from the previous step were attached to the respective Mahjong papers based on the PESAT component they represented. This method ensured that notes were categorized according to the draft definitions, minimizing bias and maintaining consistency in the classification process.

Group Data Reflection

In the Group Data Reflection phase, four research members were assigned to update and refine the Relationship Notes that had been attached to the Mahjong papers. Each researcher focused on a specific PESAT component, such as Thinking (Pemikiran) or Emotion (Emosi), due to the complexity and overlapping nature of the data. This division of labor allowed for a detailed and focused analysis of each component.

After the initial attachment of Relationship Notes, the team identified Derived Clusters by grouping language data that carried synonyms or similar contextual meanings. This process highlighted the definitional nuances within each PESAT component, enriching the understanding of the underlying spirit or value it represents. Related Affinity Notes were grouped and circled with a marker pen to delineate the Derived Clusters, providing a clearer view of the data's thematic structure.

Documentation

In the Documentation phase, the research team captured photographs of the Relationship Diagram Construction session results. This step ensured that the results could be referenced and revisited in future brainstorming sessions, as the materials used were not permanent and could deteriorate over time. Overall, the process of constructing the Relationship Diagram through inductive reasoning confirmed the existence of PESAT components, validating the research hypothesis. Additionally, it was discovered that the context of the language data involved aspects of "function, social construct, post-modernism, and psychodynamics," which are key criteria for understanding an organization's identity (Mujib, 2017).

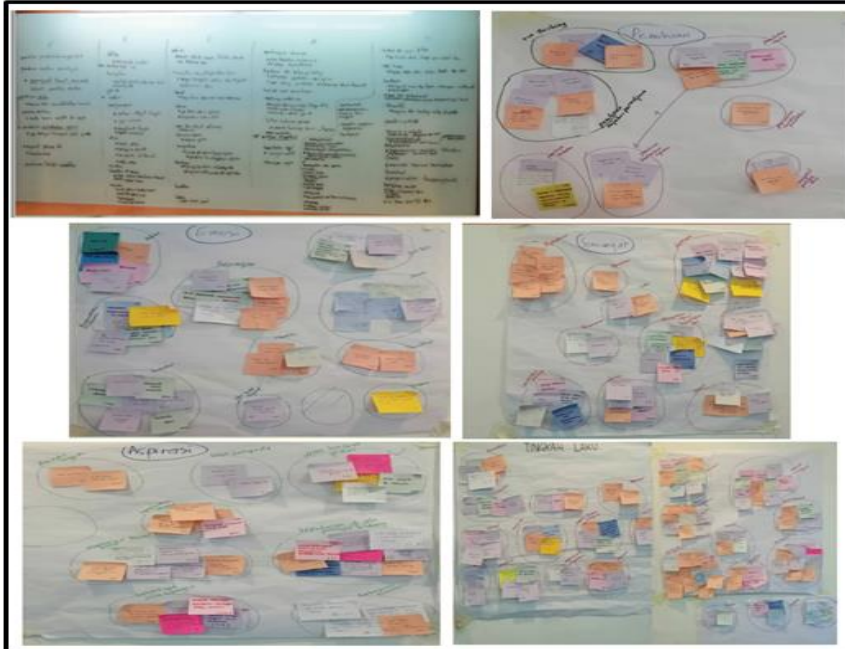
Figure 1: Data Analysis Process Using Content Analysis Method – First Stage



Figure 2: Data Analysis Process Using Content Analysis Method – Second Stage



Figure 3: Data Analysis Process Using Content Analysis Method – Third Stage



To analyze the discourse and content of interview transcripts, scripts, and relevant scientific literature, the study utilized the language corpus method with a Word Cloud Generator application. This method visualizes the frequency of words within a text, highlighting key terms. The results of this analysis revealed three lexicons with the highest frequency values: "Bangsa," "Ilmu," and "Berjaya." These terms were identified as central to UiTM's DNA structure. Despite the high frequency of the term "Malay," it was excluded from the final list due to UiTM's diverse composition, which includes various Bumiputera ethnicities.

Figure 4: Data Analysis Process to Form the Backbone of UiTM DNA Structure through the Word Frequency Corpus method using the Word Cloud Generator application

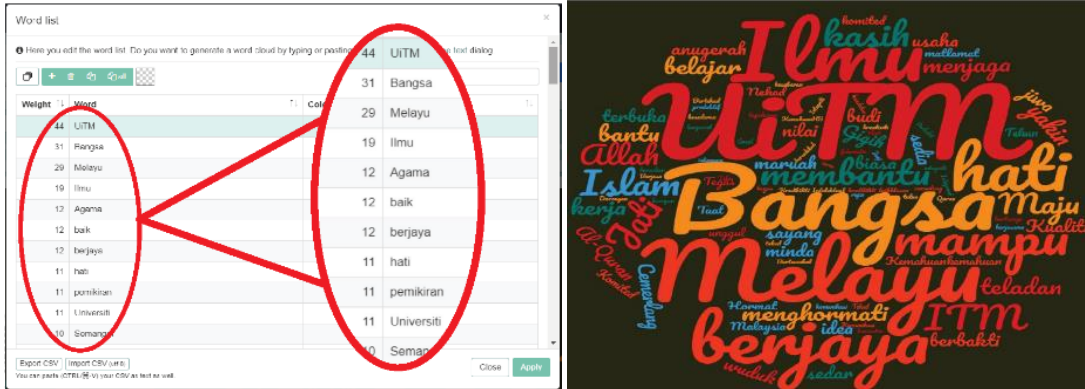


Figure 5: Formation of the “PESAT” DNA Model for Universiti Teknologi MARA based on the analysis that has been done by referring to the original structure of the DNA from the biological perspective.

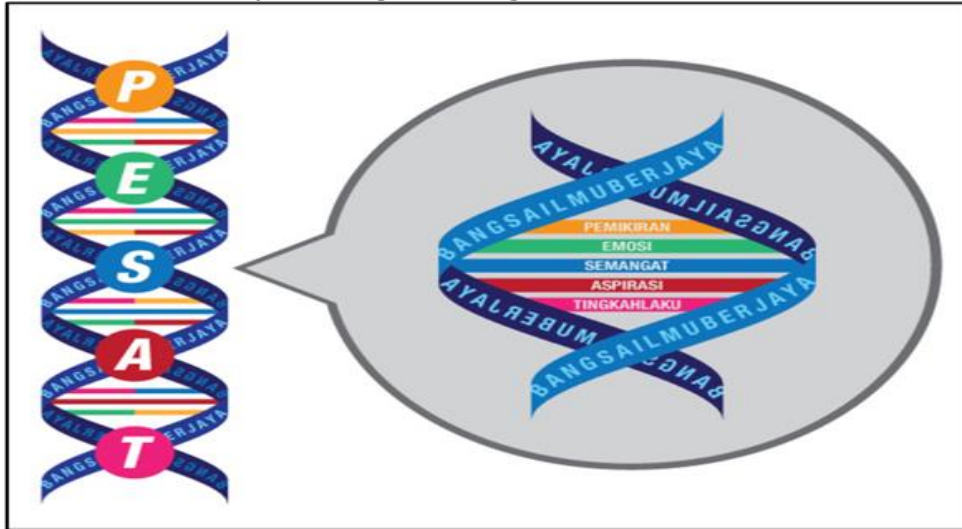
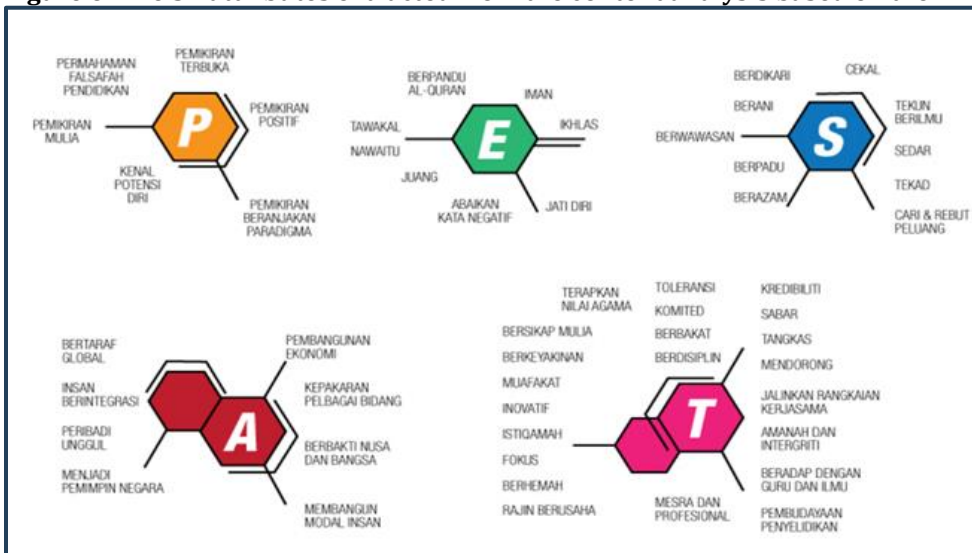


Figure 6: The 54 attributes extracted from the content analysis based on the “PESAT” DNA model



5. Conclusion

In conclusion, this study significantly contributes to the identity profiling and sustainability of UiTM denizens by developing a model that encapsulates the essential elements of UiTM's organizational DNA. The research underscores the importance of preserving and manifesting the core values of the organization, ensuring they remain relevant for future generations. The study highlights that organizational DNA, defined by elements such as thinking, emotion, spirit, aspirations, and behavior, is crucial for fostering strong values, exceptional behavior, and academic excellence. The identification and establishment of this DNA by organizational management can enhance a sense of belonging among denizens and provide a clear pathway for contributing to the organization's success. Ultimately, the results of this study offer a valuable reference for top management, particularly in the formation of human capital and the implementation of strategic planning.

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