AN ASSESSMENT OF PERSONALITY PROFILES OF FACILITY MANAGERS IN THE UNITED STATES

by

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ABSTRACT

JULIANA SOMUAH. An Assessment of Personality Profiles of Facility Managers in The United States. (Under the direction of DR. JAKE SMITHWICK)

The facilities management industry witnessed substantial growth over the years, leading to a notable increase in professionals with various skills necessary for filling entry-level and senior executive roles. It became crucial to identify, acquire, and retain these skills from these professionals. This research aimed to assess the different personality profiles needed for transitioning between entry-level and senior executive managers within the facility management sector. The study utilized a framework incorporating various assessments, including the HEXACO personality inventory, Emotional Intelligence assessments, and Q-DiSC behavioral diagnostics, to identify and comprehend the personality traits and unique characteristics distinguishing facilities professionals. Surveys were distributed to facility management professionals across the United States.

The findings were analyzed and contextualized to address the industry's specific needs and dynamics. The research revealed that entry-level facility managers exhibited higher fearfulness and emotionality traits, while senior executive facility managers showed higher fairness, liveliness, agreeableness, diligence, prudence, relationship management, and overall emotional intelligence. Furthermore, significant differences were identified among facility managers in different demographics such as age, institution, job functions, and educational levels. These findings contributed to a deeper understanding of the diverse traits displayed by facility managers and offered practical insights for improving team dynamics and optimizing managerial effectiveness in the field.

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LIST OF ABBREVIATIONS

IFMA – International Facilities Management Association

HD – Human Dimensions

HEXACO – Honesty-Humility , Emotionality, Extraversion, Agreeableness, Consciousness, Openness to Experience.

DiSC – Dominant, Inspiring, Supportive, Cautious.

EI- Emotional Intelligence

Over EQ- Over all Emotional Intelligence

SEA – Self-Awareness

SM – Self Management

SOA – Social Awareness

RA – Relationship Management

FM - Facility Management

BOMI – Building Owners and Management Institute

BOMA – Building Owners and Management Association

MBTI – Myers-Briggs Type Indicator

SAME - Society of American Engineers

MSCEIT- Mayer-Salovey-Caruso Emotional Intelligence Test

CHAPTER 1: INTRODUCTION

1.1 OVERVIEW

The field of facilities management (FM) has progressively established itself as a distinct discipline and profession within the realms of property and construction over the past few centuries. This industry, which provides the necessary operational setting to bolster and augment an organization's primary business functions and activities, has undergone significant changes over time. These shifts, which include various industry changes, have led to an influx of entry-level professionals and the attrition of older professionals. This transformation has led the facility management sector to increase their recruitment and retention efforts to ensure a sufficient workforce. As a result, the ongoing competition for skilled and proficient workers within this sector has impacted employee turnover rates. The continuous cycle of integrating and training new staff due to turnover has the potential to disrupt both organizational and project progress.

Therefore, it was crucial for companies to implement strategic initiatives aimed at attracting new talent, developing the capabilities of their current employees, facilitating the transfer of valuable skills from the existing workforce to entry-level professionals, and retaining key personnel. Achieving this objective required identifying resources, such as human capital assessments, to evaluate the soft and technical skills of the workforce and their alignment with job demands. This approach was also essential for enabling the company to achieve its mission and business continuity objectives.

1.2 PURPOSE OF STUDY

The field of organizational employee behavior and management had a rich history, having developed various methods to identify, manage, and enhance individual skills to align with an organization's goals and values. However, in facilities management, the application of these principles remained underexplored. According to a 2023 report by IFMA (Call and Smithwick, 2023) on succession planning in facilities management, the industry had long faced challenges related to its labor force. Recent studies by IFMA further showed significant demographic shifts within the FM workforce, marked by the influx of younger professionals (Call and Smithwick, 2023). These changes highlighted the need to transfer the knowledge and skills of experienced professionals to the new generation of facility managers.

Prior studies indicated that the aging facility management workforce, combined with an insufficient influx of new talent, threatened to leave the industry lacking skilled and capable facility managers. Additionally, many high-ranking officials were nearing retirement, posing a challenge for companies to replace these positions with competent professionals (Sullivan, Kashiwagi, et al., 2010). The FM industry continued to face workforce attrition, with a significant number of professionals planning to retire within the next fifteen years and many employers lacking succession plans to address this upcoming wave of retirements (Call, 2022). This situation necessitated the recruitment of skilled entry-level professionals who could emulate the advanced abilities and success of senior executives who had excelled in their roles over the years. The main goal of this research was to determine the use of tools in identifying the different personality traits of individuals in entry-level and senior executive positions within facility management in the United States. According to Call (2022), recognizing the personality traits of facility managers was crucial because those responsible for recruiting FM talent reported moderate difficulty in hiring

candidates for senior-level positions. Call, (2022) found that approximately 62% of respondents found it very easy to hire entry-level facility professionals, while only 2% found it very easy to recruit senior-level facility professionals. However, the challenge was that about 39% of respondents reported extreme difficulty in recruiting senior-level facility professionals, compared to 8% who found it extremely difficult to hire entry-level professionals. These statistics highlighted the significant challenge of acquiring senior-level FM talent compared to entry-level positions. It was essential to identify and develop the competencies and qualities of top-level management to ensure that both current and new entry-level employees were adequately prepared to take on senior executive roles in the future.

In the construction industry, there has been a significant emphasis on using tools to identify talents and soft skills such as leadership, fearlessness, honesty, humility, and dominance. However, there was a notable lack of literature on personality traits specifically within the facility management sector. In contrast, fields like project management, procurement, and general field engineering successfully employed tools like Human Dimensions (HD), recognizing their value and applicability. A study by Ogundare et al., (2023b) demonstrated the effectiveness of applying a human dimension tool to examine the distinct differences between leaders in specialized fields and project managers in general contracting. Leaders in specialty fields exhibited higher levels of emotional intelligence compared to general contractor project managers, with overall higher mean scores in this area. They particularly excelled in social awareness, self-awareness, and people-oriented skills, surpassing their counterparts by 11%, 3%, and 39% respectively (Ogundare et al., 2023b). These findings indicated that individuals in specialty fields had a stronger ability to comprehend their own emotions, perceive others' emotions, grasp social dynamics, and interact

effectively. Recognizing the benefits gained by certain sectors using these tools, it became essential to address this gap within the field of facility management.

Using the Human Dimensions (HD) instrument to evaluate personality traits across different professional levels, from entry-level to senior executives, was crucial for developing a robust succession strategy and recruitment approach in facility management. This study aimed to create a comprehensive model for the entire facility management sector, highlighting the significance of this method in improving practices within the field.

1.3 RESEARCH SCOPE AND OBJECTIVES

The research aimed to identify the different personality traits between entry-level and senior executive positions in the facility management industry in the United States. The study set several objectives to achieve this aim:

- Identified the various personality traits using Emotional Intelligence, Q-DiSC Behavioral Assessment, and HEXACO Personality Inventory.
- Measured the significant differences between professionals based on the personality profiles of entry-level and senior executive levels.
- Compared the different personality profiles across other demographic factors.
- Addressed the gap in literature regarding the use of tools to identify personality traits in facilities management.
- Discussed potential future research based on the results.

1.4 RESEARCH HYPOTHESIS

In the stated research objectives, the entry-level and senior executive levels of facility managers were designated as the independent variables, representing the distinct groups analyzed to identify variations in personality traits. The dependent variable, "personality traits," was the focus of measurement to determine how it varied across these two tiers within the facility management sector in the United States. Consequently, the research developed three distinct hypotheses based on these independent and dependent variables.

HYPOTHESIS 1:

Null Hypothesis (H0): There are no differences in personality traits between the two levels in the United States.

Alternative Hypothesis (H1): There are differences in personality traits between the two levels in the United States.

HYPOTHESIS 2:

Null Hypothesis (H0): There are no significant differences in specific personality traits when comparing the two levels in the United States.

Alternative Hypothesis (H1): There are significant differences in specific personality traits when comparing the two levels in the United States

HYPOTHESIS 3:

Null Hypothesis (H0): There are no significant differences in personality traits in related demographic factors (age, institution, etc.).

Alternative Hypothesis (H1): There are no significant differences in personality traits in related demographic factors (age, institution, etc.).

1.5 ORGANIZATION OF THESIS

The thesis was structured into seven chapters. Chapter 1 provided an overview of the facilities management industry, highlighting demographic shifts that prompted the research, identified needs, contributions to the body of knowledge, and research findings. Chapter 2 reviewed literature, examining the facility management industry, its hierarchical levels, and distinct roles. The literature explored the identification of personality traits and their benefits to the facility management industry, as well as similar advantages in other industries. It also reviewed various methodologies used in other sectors to determine workforce personality traits, establishing the suitability and advantages of using the human dimensions tool in this research. The study mentioned the application of the HEXACO personality inventory, Emotional Intelligence evaluations, and Q-DiSC behavioral assessments, emphasizing the importance of recognizing these traits for the advancement of the facilities industry.

Chapter 3 outlined the methodology used in the study, detailing specific procedures and approaches. It provided an in-depth examination of the human dimension assessment tool applied in the research. Chapter 4 detailed the survey questionnaire prepared to study the number of facility managers in the United States and described the variables used to measure the differences identified. Chapter 5 presented the statistical and descriptive analyses of the state agencies using the collected data. Chapter 6 discussed the analysis results from the previous chapter. Chapter 7 concluded the thesis and suggested future research areas to be considered.

CHAPTER 2: LITERATURE REVIEW

2.1 FACILITY MANAGEMENT

Facilities management (FM) gained recognition as a specialized profession within the property and construction sectors in the late 1980s (Tay & Ooi, 2001). This rise was marked by the establishment of specialized FM organizations worldwide, including the International Facility Management Association in the USA, the Japan Facility Management Association in Japan, the British Institute of Facilities Management in the UK, and the Facility Management Association of Australia (Tay & Ooi, 2001). Despite these developments, the profession continued to face an identity crisis in the United States.

By the late 1970s, FM started to be acknowledged and formed its unique professional identity within companies in the United States and Canada, eventually being recognized as facility management (Rondeau et al., 2012). However, this recognition did not extend as widely to other sectors of the building industry, where roles such as architects, project managers, procurement experts, and civil engineers were more commonly known. In practice, the responsibilities and scope of work for a facility manager could vary significantly among individuals holding the same position. Cotts et al., (2010) noted that to strengthen FM's standing in the United States, the federal government took steps to unify facility managers, including uniformed service members, both active and retired, under the Society of American Engineers (SAME). This initiative aimed to promote networking, educational growth, and the exchange of opportunities. Following on, (Cotts et al., 2010) also mentioned that to strengthen the role of facilities managers in the United States, organizations like the Building Owners and Managers Association (BOMA) and the Building

Owners and Managers Institute (BOMI) have actively worked to represent and support property and building managers, which inherently includes facility management duties. These strategies have been adopted globally to enhance the development and visibility of the facility management sector.

Facility management has been regarded as a relatively recent addition to the fields of real estate, architecture, engineering, and construction, traditionally linked with tasks like cleaning, custodial services, help desk operations, and maintenance and repairs (Atkin & Brooks, 2021). For years, several researchers such as (Becker & Steele, 1990) have defined it as a role responsible for coordinating all activities related to the planning, design, and management of buildings, along with their systems, equipment, and furnishings, to enhance the organization's competitive advantage in a rapidly changing global environment. Moreover, Nourse (1990) emphasized that the role of facility management often involves overseeing a firm's broader strategic planning but frequently does not focus on the financial bottom line.

These definitions had not thoroughly expanded the role and responsibilities of the facility management industry. Estates (1996) described it as a practice that involves aligning the physical work environment with the people and their tasks within an organization, merging business management, architectural design, and the behavioral and engineering sciences. In subsequent years, Shiem-Shin (1999) further defined facility management as a profession dedicated to providing an enabling work setting, the ideal operational space that supports both business operations and the workforce. To further clarify, the main role of facility management was to oversee resources, offering both strategic and operational support. Core aspects of resource management crucial to the facility management role included the stewardship of finances, physical assets, personnel, and the handling of information and knowledge resources (Nutt, 2000).

However, the International Facilities Management Association (IFMA) described facility management as a field that integrates multiple disciplines to ensure the functionality, comfort, safety, and efficiency of the built environment through the coordination of people, location, processes, and technology (IFMA 2023). International standards, such as ISO 41011, further characterized facilities management as a function within organizations that unites people, locations, and processes within the built environment to improve people's quality of life and enhance the efficiency of core business operations. These definitions and the general view of facility management collectively recognized it as the integration of people, processes, technology, and physical spaces. This concept was extensively illustrated in Figure 1 below by the International Facilities Management Association (IFMA).

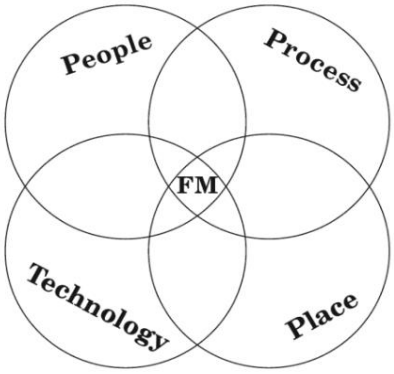

Figure 1:People, Process, Place, Technology (Developed by the International Facility Management Association)

For the facility management industry to effectively oversee people, places, processes, and technology, it needed a variety of job roles working together to maintain a harmonious balance among these elements. Therefore, it was important to identify the different job levels and their specific responsibilities that contributed to achieving this equilibrium.

2.2 FACILITY MANAGEMENT JOB LEVELS

The job levels of facility managers were uniquely tied to the needs of various companies. Recognizing the diverse job levels, roles, and scope of facilities management in relation to the mission and vision of companies was increasingly important (Chotipanich, 2004). The industry aimed to establish a standard by considering the job levels within the business structure for facilities managers and accepting these roles as a standard for the industry. Consequently, Waheed & Fernie (2009) highlighted the strategic importance of the functions at various job levels in the facility management profession and their fit within different companies. Facility management was seen as the central role that organized the communication and interaction of an organization's physical location within the built environment, significantly contributing to the organization's success and establishing defined roles to execute this effectively.

The job levels of facility managers, which played a crucial role in the success of organizations, were broadly categorized into operational levels and strategic services (Nutt, 2002). The operational facility manager's job level involved overseeing the day-to-day functions of a workspace, aiming to provide a safe and functional working environment for all facility users (Chotipanich, 2004). This level represented the most visible role of the facility manager and supported the fundamental needs of an organization's integrity and business continuity plans. On the other hand, facility managers are also engaged in various strategic services, such as managing portfolios of property assets, making strategic decisions regarding property, and planning and developing facilities. These strategic activities were aligned with an organization's policies and strategic objectives and could vary over different periods (Chotipanich, 2004).

Consequently, Hinks et al., (2002) identified that the categorizations of job levels varied among organizations, as these levels were defined based on the specific business setups of each

organization. For example, the job levels for a facility manager in a hotel differed significantly from those in the industrial sector due to the differing business environments and purposes of the facilities they managed. According to Price (2004), the job level of a facility manager overseeing a hotel, recreational space, or commercial mixed-use space placed high importance on consumer impacts. However, for facilities focused on nuclear plants, hospitals, and industrial settings, a greater emphasis was placed on maintenance (Chotipanich, 2004).

IFMA has grouped facilities management job levels generally into subgroups according to their responsibilities in the Global Salary and Compensation Report (Smithwick and Call 2021). Figure 2 depicted the positions in facility management from levels 1 to 5, organized according to the staff and supervisors managed by each level to precisely determine their qualifications.

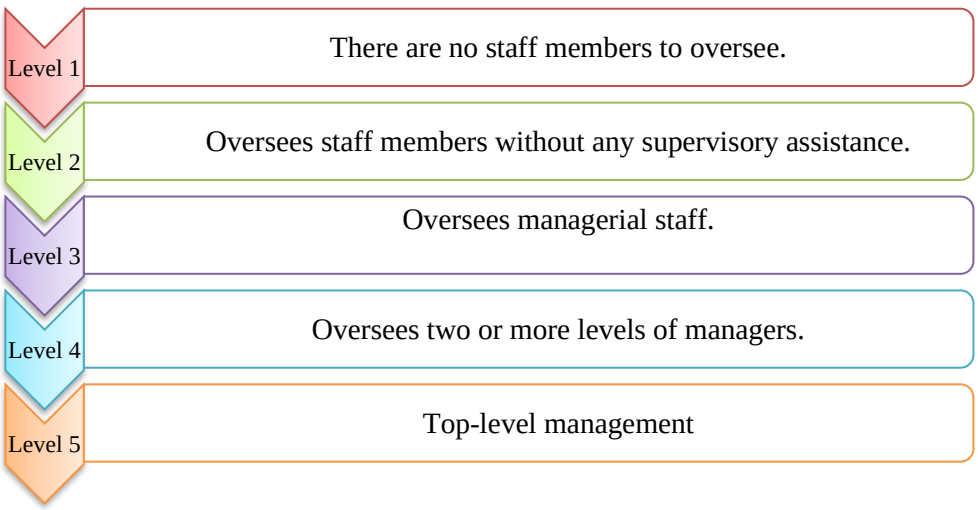

Figure 2:Facility management levels from level 1-5

According to the provided information, level 1 facility managers worked independently without supervising any employees. In contrast, level 2 facility managers supervised individual team members. Level 3 professionals managed other managerial personnel, while level 4

professionals oversaw multiple layers of managerial staff. At the top, level 5 facility managers held the highest positions, acting as senior executives in the facility management field. Additionally, the IFMA report on Women in Facilities Management: A Global Salary and Compensation Supplementary Report highlighted that facility management roles could be further categorized as described in the figure below (Call and Smithwick 2023).

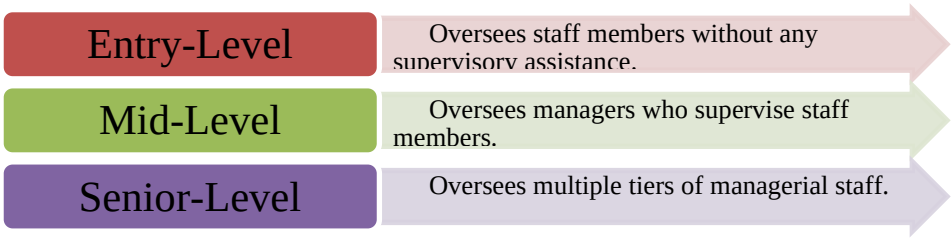

Figure 3:Facility management levels- Entry level to Senior level

Figure 3 showed that entry-level facility professionals managed team members independently, without any supervisory support. Mid-level managers supervised managers who, in turn, oversaw other staff members, while senior-level managers were responsible for managing multiple layers of management staff. This delineation effectively clarified the distinct responsibilities of facility managers in efficiently managing space, people, processes, and technology.

Exploring the differences between entry-level and senior executive positions, particularly in the facility management sector, was crucial. This examination was important not only in facility management but also in other key sectors such as construction and project management. To gain a deeper understanding of these roles, it was necessary to investigate the specific duties and responsibilities associated with each level.

2.3 VARIATIONS BETWEEN THE JOB LEVELS

The facilities management industry was inherently dynamic and continuously evolved to meet the diverse needs of various organizations. According to Roper & Payant (2014) , facility managers, regardless of their specific duties, were essentially business managers and should have been regarded on the same level as human resources and information technology managers. There was a limited range of ways to structure the facilities management levels within an organization's departments. Despite this, the differences in responsibilities between entry-level and senior executive roles were crucial for ensuring an organization's operational success. Payne (2000) noted that as the facilities management profession grew and matured within organizations, there had been significant recognition of the benefits derived from diversifying roles and service levels in this field. Furthermore, diversifying these roles was crucial, but equally important was developing and shaping a strategy that supported the organization's goals and objectives. Entry-level professionals brought a wealth of new concepts and skills from their academic backgrounds to the organization, particularly in managing people, places, and technology. Similarly, senior executives, with their extensive experience and skills, also played a significant role in the organization, leveraging their deep-rooted expertise.

The IFMA report on Women in Facilities Management indicated that entry-level roles involved professionals managing a certain number of employees within a firm, while senior executive roles encompassed professionals overseeing two or more levels of supervisors (Call and Smithwick, 2023). This distinction demonstrated that entry-level facility managers were responsible for managing a specific tier of employees. In contrast, senior executive managers, who held the highest positions, supervised managers who directed their staff. Additionally, senior executive facility managers possessed extensive professional expertise and skills, aiming to

disseminate their knowledge across the industry. Conversely, entry-level facility managers were professionals familiar with the industry's concepts and potential benefits but sought exposure to various knowledge areas to enhance their skill sets (Payne, 2000). Furthermore, Payne (2000) noted that entry-level facility management roles were often occupied by individuals studying facility management or engaged in postgraduate or modular training focused on areas of professional competence in the field.

Facility managers at the entry-level were considered professional specialists or managers who lacked comprehensive working knowledge or an operational grasp of the full range of services they were responsible for. They also had limited time to acquire this detailed knowledge and the necessary experience (Payne, 2000). In contrast, a senior executive facility manager in a highly decentralized organization was identified as an entrepreneurial figure, responsible for tasks such as documenting standards and publishing policies and procedures (Roper & Payant, 2014). Given their limited skills, entry-level facility managers were not viewed as entrepreneurs. Senior executive-level facility managers, characterized by advanced degrees and substantial work experience, made hiring for these positions quite challenging (Call, 2022). Entry-level facility managers, typically with an educational background in facility management, had specific skills that could be further developed through practical experience.

Furthermore, Adams (2018) noted that many firms had to lower the qualification criteria for senior executive positions in the facility management industry due to the significant difficulty in recruiting for these roles. According to the IFMA Global Salary Report, an entry-level or level 1 facility manager was defined as an individual with a maximum of 11 years in management roles. Conversely, a senior executive in facility management was described as someone with more than 17 years of experience in managing roles. This experience included, but was not limited to, the

supervision of personnel, budgets, assets, and suppliers, contributing to the heightened challenge of hiring senior executives in the field (Smithwick and Call, 2021).

The environment and culture of a construction project were unique compared to other workplaces. Managing a construction project occurred in this specific setting. Workers in the construction industry needed to remain alert and responsive to various activities happening around them on the project site. Therefore, it was crucial for every member of the project team to possess the appropriate knowledge, skills, equipment, and methods to ensure the project's successful completion (Affandi et al., 2015). Considering job levels in the construction industry that contributed to a project's success, Bennett et al. (1999) identified four major categories of job levels and their respective responsibilities. The management roles were classified as non-management, supervisory, middle management, and senior management. Additionally, the non-management role, often referred to as the entry level, typically did not involve managing any staff and usually required self-reliance. This category included positions such as assistant engineers and quantity surveyors (J. F. Bennett et al., 1999). Moreover, those in senior management roles, who occupied higher positions, were responsible for making crucial decisions for the company at large and managed several supervisors. This group included roles like company directors, company partners, and project directors (J.F. Bennett et al., 1999). However, to perform effectively as a senior manager in the construction industry, it was necessary to have significant influence skills directed towards the lower job levels.

In the four categories, individuals in 'middle management' and 'senior management' roles performed managerial functions that involved supervising both personnel and associated tasks (J.F. Bennett et al., 1999). This scenario mirrored what was observed in the facilities management sector, where the entry-level position corresponded to non-management roles in the construction

field. Similarly, the senior executive position in facilities management, which entailed overseeing vital aspects of the organization, was comparable to the senior management role in the construction industry. Moreover, in the construction sector, entry-level professionals were typically referred to as site managers, while senior executives were known as construction managers or project managers (Affandi et al., 2015). According to Affandi et al. (2015) , Table 1 below identified the roles performed by both entry-level construction managers and experienced construction managers. Entry-level construction managers supported the project manager by handling staff assignments, contributing to take-offs, aiding in the tendering process, and tracking and documenting project progress (Affandi et al., 2015). Meanwhile, the construction manager was responsible for more critical tasks, such as approving wages, managing requisitions, and enforcing policies that contributed to the project's success (Affandi et al., 2015).

Table 1:Roles and tasks of entry level construction manager and construction manager

Roles and tasks	Entry-level Construction Manager	Construction Manager
Staff (Visiting Consultants, training)	Performs this role most of the time	Supervises this role/task
Third party (Public, local authorities, police etc.)	Never performs this task	Main person responsible
Survey Work (Site setting out, lines & levels, datum's benchmarks, signage)	Performs this role most of the time	Supervises this role/task
Labor	Assists in this role	Main person responsible

(Recruitment, dismissal, inter-site liaison, supervision)		
Material (Take off, schedule and requisitions)	Sometimes performs this role	Supervises this role/task
Sub-contractor (Tendering and selection process, initiate general correspondence)	Assists in this role	Main person responsible
Administrative (Site diaries, check drawings, maintain site records)	Main person responsible	Supervises this role/task

Considering the various responsibilities assigned to entry-level construction managers compared to their more experienced counterparts, it was clear that newcomers to the construction industry were not expected to oversee every aspect of a project. Their primary role was to support the construction manager, assisting in the project's timely, budget-conscious, and quality-standard completion. Typically, they managed the project's administrative tasks, including maintaining site diaries, verifying drawings, and keeping records. According to Affandi et al. (2015), understanding the diverse responsibilities of the construction manager provided the foundational basics for identifying the right competencies required for entry-level construction managers.

Pathuri et al. (2022) identified three managerial levels in the construction industry: entry-level managers, mid-level managers, and senior-level managers. Lane & Robinson (1995) highlighted significant differences between senior-level managers and entry-level managers, noting that senior-level managers were responsible for developing and implementing strategies to advance the organization's mission, while entry-level managers assisted in achieving this mission.

Pathuri et al. (2022) further described entry-level construction managers as recent graduates with various degrees from universities and little to no experience. In contrast, senior-level construction managers were defined as professionals with over seven years of experience in their current roles and additional positions held previously.

The difference between entry-level and senior executive positions is evident across various industries. Recognizing and nurturing the specific competencies required for each role is crucial for the growth of these sectors. In facilities management, the terms 'management' and 'leadership' are often used interchangeably, and distinguishing between them in detail would greatly benefit the industry. It is also recommended that entry-level managers leverage the practical experience, skills, and knowledge of senior executives to advance their careers (Mintzberg, 2004). Therefore, understanding the distinct differences and responsibilities associated with each role can help the facility management sector effectively identify methods to evaluate the essential skills of individuals at different job levels.

2.4 PERSONALITY TRAITS

Personality comprised a unique blend of thoughts, emotions, and behaviors in each person, shaping and directing how they engaged with their environment. This included interactions with human elements, such as organizational needs and working conditions, as well as nonhuman aspects like the physical environment (Atalah, 2014). Gatewood et al. (2015) defined a trait as a measurable continuum where individual differences were quantitatively assessed based on the extent of characteristics exhibited by the person.

Therefore, personality traits were inherent attributes of a person that involved aligning the physical workspace with the organization's people and their tasks, merging principles from both

behavioral and industry responsibilities (Estates, 1996). These traits were not specific to any particular job role but were seen as attributes that made employees valuable to their employers (Buck & Barrick, 1987). They were also regarded as "skills which cut horizontally across all industries and vertically across all jobs from entry level to chief executive officer" (Sherer & Eadie, 1987). However, personality traits and skills were broad, non-technical abilities essential for performing any job, regardless of its nature or level. Cheah (2020) identified personality traits as characteristics that shaped a person's choices, principles, selections, feelings, inclinations, and pursuits. Personality traits represented the "soft skills" of an employee, whereas their expertise and technical knowledge constituted their "hard skills" (Skulmoski & Hartman, 2010). According to Silzer & Dowell (2010), the personality skills and abilities of a professional represented the unique contributions they could make to the overall organization. Cheah (2020) defined personality traits as the characteristics an individual developed independently, reflecting their unique identity and who they were as an individual. Personality traits were also identified as the various individual factors that determined the job performance of a professional regardless of his level of employment (Carr, 2000). Additionally, Cheah (2020) supported this claim by confirming that understanding personality traits could be a useful tool for individuals seeking deeper self-awareness and insight. By recognizing these traits, professionals could gain a better understanding of not only their own characteristics and behaviors but also those of their colleagues. This enhanced comprehension could facilitate more effective communication and collaboration among team members, leading to a more harmonious and productive work environment.

This statement underscored the necessity for thorough research to explore the importance and impact of identifying personality traits within professional settings. It was essential to broaden the focus beyond the built environment to a variety of sectors, examining the advantages they had

gained from recognizing and understanding their workforce's personality traits. Delving into this area could reveal significant insights into how personality traits influenced workplace dynamics, employee engagement, and the overall effectiveness of organizations across different fields. Such an extensive investigation could uncover crucial elements that contributed to the success and productivity of various industries, shaped by the distinctive characteristics of their employees.

2.4.1 BENEFITS OF IDENTIFYING PERSONALITY TRAITS

2.4.1.1 FACILITY MANAGEMENT

The coordination of individual personalities within a team significantly impacted relationships among members at different job levels. Personality traits influenced individuals' thinking and communication styles, along with their approaches to decision-making, stress management, and conflict resolution (Ameer et al., 2022). Facility professionals who maintained good relationships across diverse job levels communicated more effectively, fostered a positive workplace atmosphere, demonstrated higher commitment levels, and achieved superior results. Recognizing various personality traits at both entry and senior executive levels provided considerable benefits to the facility management industry, such as identifying potential talent, reducing turnover, and supporting the career progression of entry-level professionals. Furthermore, senior executives who understood their own personality traits could enhance them to better align with the company's missions and objectives. According to Lykourentzou et al. (2016), if these personality traits were not properly aligned across different job levels, it could result in interpersonal tensions and conflicts, potentially hindering the company's growth and progress.

Examining personality traits among facility managers in hotels, Durodola et al. (2012) used Covey's criteria to assess these traits. They found that chief executive managers lacked a proactive

approach, which hindered their ability to effectively implement strategic policies, especially in managing hotel facilities. This lack of proactivity significantly affected the facility manager responsible for the hotel's facilities, diminishing their ability to perform their roles effectively. Additionally, when evaluating efficient facilities managers through the Covey traits model, it was observed that many were at the entry level, typically with an engineering background. These managers possessed strong communication skills, demonstrated leadership abilities, and excelled in creating a safe and efficiently organized work environment (Durodola et al., 2012). However, due to inadequate management within the hotels, these facility managers faced challenges in fulfilling their responsibilities effectively. This impeded their ability to ensure that the hotel's facilities were properly managed and maintained. The lack of leadership and direction at higher levels directly impacted their capacity to execute their duties efficiently and maintain the standard of the facilities under their care. This underscores the importance of recognizing personality traits across various job levels to effectively carry out one's duties without negatively impacting other roles within an organization.

2.4.1.2 IN OTHER INDUSTRIES

Within the construction sector, various skills and competencies have been identified for senior executive positions and roles (Gunderson & Gloeckner, 2011), graduating construction management students, also known as entry-level professionals (Farooqui & Farooqui, 2009), effective project leaders (Odusami, 2002), and project managers (Edum-Fotwe & McCaffer, 2000). However, the emphasis on job skills within the construction and facilities industry remains limited. Bennett & Robinson (2000) identified six critical factors contributing to organizational success: honesty, truthfulness, leadership skills, greed avoidance, and humility. They emphasized

the need to develop a strategic framework for positioning job levels based on individual skills. This suggests that technical skills alone are insufficient for optimal job performance. It implies that effective job execution requires a blend of technical proficiency and other critical factors such as interpersonal skills, adaptability, and problem-solving abilities. The emphasis is on a holistic approach to professional competence, where technical know-how is complemented by a range of soft skills and personal attributes.

Project managers have found greater project success by focusing on interpersonal skills rather than technical skills (Posner, 1992). Additionally, it has been observed that the technical abilities of project managers, often categorized as "hard skills," have not significantly contributed to project success compared to individual traits or soft skills (Müller & Turner, 2006). Senior executive professionals in project management should recognize that improving project success requires a deep understanding of the essential leadership qualities necessary for the project. They should evaluate how their personal characteristics align with the requirements of their roles. This process involves identifying the necessary leadership qualities and introspecting to align their own personality traits with these requirements. Such alignment is crucial for effective leadership and successful project outcomes (Gehring et al., 2012). This raises the question of "what makes a good project manager?" Many might assume that technical abilities are paramount. However, Chen et al. (2005) identified fourteen job task characteristics, including communication as an essential soft skill. Therefore, for project managers to succeed, mastering communication skills is vital for team satisfaction and productivity (Henderson, 2008). Moreover, Creasy & Anantatmula (2013) proposed that utilizing personality traits is crucial for making informed decisions in project manager recruitment and talent training.

Belassi & Tukel (1996) highlighted that the construction sector increasingly relies on project managers to improve project outcomes. However, achieving this improvement necessitates support from stakeholders, effective group dynamics, various organizational levels, external influences, and, most importantly, the project managers' characteristics. Therefore, it was crucial for project managers to excel in leadership to navigate these factors effectively and ensure project success. This required more than just technical expertise; it involved essential qualities like leadership skills, assertiveness, dependability, and avoiding greed. Dvir et al. (2003) emphasized that a project's success is significantly influenced by the project manager's leadership style, personal characteristics, and the nature of the project being managed. Additional research demonstrated a substantial link between a project manager's characteristics and the project's success, underscoring how the manager's personal and professional qualities directly impact the project's outcome (Thal & Bedingfield, 2010). There has also been increased focus on comparing the personality trait of extraversion with project success among project managers. Extraversion, characterized by being sociable, enthusiastic, assertive, and dominant (McCrae et al., 2006), has been linked to fostering creativity in projects, thereby contributing to their success (Chiang et al., 2015).

Conscientiousness in project managers reflected their ability to organize, take responsibility for tasks, persist, and stay focused on achieving goals (McCrae et al., 2006). Additionally, a conscientious project manager could effectively control their projects and work environment. This assertiveness enabled team members to manage and influence their own areas effectively (Peterson et al., 2003). Turner (2009) further clarified that a key trait for project managers to lead and take charge of projects was their problem-solving ability and outcome-focused approach. These qualities were directly tied to their conscientiousness. Project managers

with these attributes were known for prioritizing effective outcomes, which significantly contributed to project success. High-achieving project managers were recognized for their strong critical thinking skills and their capacity to influence and motivate others effectively (Müller & Turner, 2010). These successful project managers did not gain these competencies through formal education but possessed them as inherent personal skills. Furthermore, the professional commitment of project managers to their roles was analyzed in relation to their personality traits, irrespective of their job levels within an organization. Andersen et al. (2006) stated that "commitment towards the project, which subscribes to effective professional commitment, ensures project success." This indicated that the personality traits project managers aligned with to promote project success resulted in enhanced professional dedication and effectiveness.

An employee's ability to contribute to an organization's growth at either the entry level or senior executive level could be divided into two main components: their job knowledge and their individual skills and abilities (Wright et al., 1995). Choosing a motivated individual for a role depends on identifying someone with the appropriate skill set. This choice affects the employee's performance, conflict resolution capabilities, and drive to fulfill the organization's goals and mission, all of which hinge on the individual's skill set. Moreover, it was acknowledged that having a diverse array of personality traits among construction management professionals was especially beneficial during the conceptual and design phases of a project, rather than having construction managers with a uniform personality type (Carr, 2000). This was because construction managers with a wide range of personality traits were more likely to provide effective solutions and take a comprehensive view of the building project (Carr, 2000). Senior students in construction management, who were about to enter the workforce, had been analyzed by experts (Emmer & Brunhoeffer, 2015) to identify personality traits that could guide them towards a career in the

construction industry as high-level executive professionals. This suggested that understanding the senior executives in the field could give senior students insights into what made a successful construction manager and the skills they needed to develop to follow their path.

Industries such as information technology, management consultancy, and product design and manufacturing are predominantly project-driven (Cheng et al., 2005). These sectors have widely utilized personality traits to reduce employee turnover, especially during the hiring process. This approach has been vital for promoting individuals from entry-level positions to senior roles, forming effective teams, and developing leadership skills among junior staff. They adopted this method upon recognizing that it boosts employee motivation and lowers turnover rates. Moreover, organizations benefit from enhanced overall performance and a notable reduction in operational costs (Deviney et al., 2009).

Luţaş et al., (2020) identified four critical elements that characterize a proficient project manager: specialized knowledge in project management, certification in project management, educational qualifications related to the project area, and interpersonal communication and relationship skills. Therefore, recognizing a project manager's unique traits is crucial as it highlights their expertise. In the U.S. commercial construction industry, personality traits have been particularly utilized among 400 top-performing contractors identified by Engineering News Records. These companies have applied personality traits in various areas, such as hiring, developing leadership qualities, managing promotions, and assigning team roles (Childs et al., 2017). Consequently, it was essential for organizations to assist both entry-level and senior executive employees in identifying teams where their personalities align with other team members, ensuring high productivity and job satisfaction. This understanding of personality traits, along with achieving high productivity and employee satisfaction, can help reduce employee turnover.

Additionally, it lowers training costs and mitigates human resource challenges that arise from conflicts within the built environment when implemented effectively (Oedekoven & Hay, 2010).

Human resource researchers have emphasized the importance of personality traits in improving employee selection decisions, particularly when detailed data on these traits are accurately collected (Gatewood et al., 2015). Highlighting the significance of personality traits among estimators in the construction industry, Atalah (2014) found that estimators typically display stronger supervisory skills than project managers, are more sociable, exhibit a higher sense of duty, and possess greater self-discipline. Their study also discovered that project managers often have a "human services" personality trait, indicating a strong desire to assist others on projects, a trait less common among estimators. Additionally, project managers with a 'gregariousness' trait prefer being around others, underscoring their inclination towards teamwork and collaboration in project settings (Atalah, 2014). However, the study's findings on differentiating personality traits between project managers and estimators in the construction industry showed no significant differences. This suggests that individuals in these roles could switch positions without facing major difficulties in effectively carrying out their duties (Atalah, 2014). This underscores the importance of recognizing personality traits across different job levels to support well-informed decision-making. Furthermore, companies that align their employees' personality traits with the firm's essential requirements for various job positions are more likely to achieve success (Atalah, 2014).

In a study examining the significance of personality traits among fifty construction and design engineers at the Hawaii State Department of Engineering Construction (SDEC), it was found that construction engineers primarily displayed left-brain characteristics, whereas design engineers exhibited a strong preference for right-brain traits. This discovery shed light on the

frequent conflicts between design and construction engineers, especially during the design drawing phase (Singh, 2002). The research indicated that left-brained construction engineers were more focused on organizational changes than their right-brained counterparts in design. Those with a left-brain orientation typically demonstrated traits such as analytical thinking, a scientific approach, methodical processes, linear reasoning, punctuality, verbal skills, and logic. In contrast, right-brain oriented individuals were more spatial, visual, intuitive, instinctive, immediate in their responses, and artistic (Singh, 2002).

In the Korean tourism sector, an examination of personality traits among service providers such as hotels, airlines, travel agencies, and theme park staff demonstrated that attributes like sociability, amiability, diligence, and receptiveness positively influenced their emotional labor (Sohn et al., 2012). Additionally, research in the healthcare industry on personality traits centered on supervisory job performance among professionals handling challenging patients revealed that characteristics such as integrity and modesty were crucial for supervisors to perform effectively (Johnson et al., 2011). Further studies involving undergraduate students, who represent entry-level professionals, investigated their ethical perspectives in leadership through "person-organization fit" in both ethical and unethical contexts. These studies found that these students generally displayed ethical behaviors even when confronted with unethical situations (Žiaran, 2015).

It became evident that a variety of industries had successfully harnessed the power of personality traits, acknowledging their significant contributions to industry enhancement.

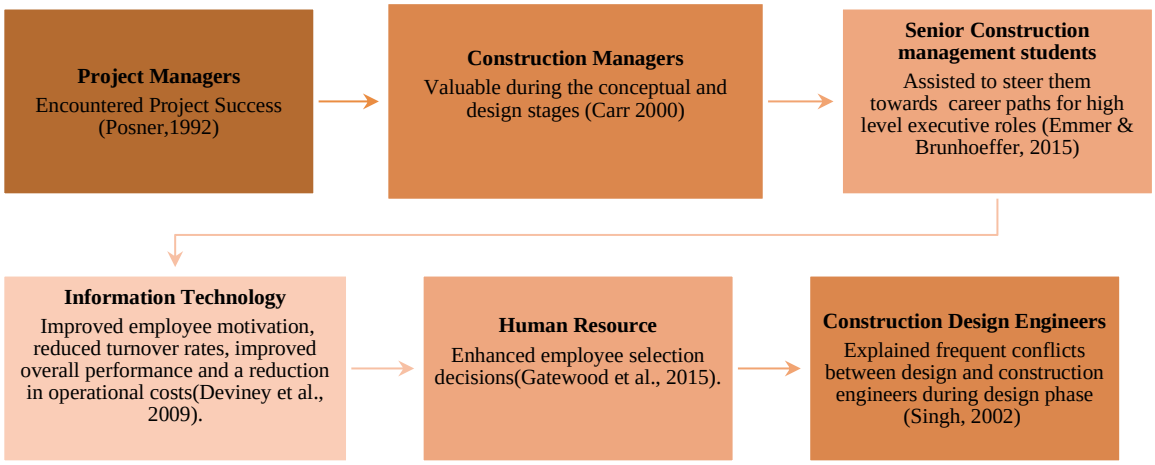

Figure 4:Adavantages of Human Dimensions in other industries

These traits proved instrumental in identifying potential talents, facilitating career progression across different levels, and positively influencing hiring, employee retention, and role transitions. Figure 4 highlights several industries spanning various fields, each showcasing the pivotal advantages of recognizing personality traits. This emphasized its fundamental importance across industries and highlighted the potential benefits the facility management sector could gain from adopting this approach. The key insight is that technical prowess alone did not determine value in an organization; instead, the distinct individual qualities each person possessed truly enriched an organization.

Recognizing the crucial role of personality traits in various fields highlighted the necessity for a detailed analysis of the differing personality characteristics between entry-level employees and senior executives in facility management. Moreover, this insight underscored the importance of using appropriate techniques to accurately assess these traits.

2.5 PERSONALITY TRAITS ASSESSMENTS

Acknowledging the vital role of people management at all levels and the diverse personality traits each individual brings highlights the significant advantages these factors can offer an organization. This understanding is essential for developing innovative and improved strategies for identifying personality traits, particularly within the built environment. It underscores the need for tailored approaches that identify the unique characteristics of individuals, fostering a more effective and cohesive work environment that aligns with the industry's evolving demands and dynamics (Cheng et al., 2005).

Personality assessments are tools designed to evaluate an individual's decisions, values, preferences, attitudes, and interests. These assessments provide employers with insights into how potential employees might behave in a work setting, based on data gathered about their information processing, emotional responses, problem-solving abilities, and social interaction skills. The assessments are structured to allow individuals to respond to questions by selecting traits or characteristics they believe align with their own choices or personality, ensuring there are no incorrect answers. The focus is on understanding an individual's decision-making process, preferences, interests, and the manner in which they arrive at decisions (Childs et al., 2017).

While this study is valuable, it is believed that examining a broader range of personality traits and theoretical frameworks will provide a more comprehensive understanding of the various aspects of an individual's personality (Thal & Bedingfield, 2010). It is crucial to identify and examine the different methods employed across industries to evaluate personality profiles. This approach will help determine which assessment techniques could be effectively applied in this study. Understanding these methodologies will assist in selecting the most suitable tools for

accurately capturing the diverse personality traits within the study's scope, ensuring a thorough and relevant analysis.

The lasting relevance and adaptability of Covey's (2020) paradigm, further supported by Nebel & Ghei (1993), establish it as a flexible and practical tool for evaluating managers' traits at various levels and in different contexts. This makes it particularly suitable for assessing the characteristics of facility managers in the hotel industry, offering a framework that can effectively address the unique demands and situations specific to this sector. Utilizing this approach ensures a customized understanding of management traits within hotel facilities management (Covey, 2020). The Covey personality assessment tool effectively identifies key traits outlined in "The Seven Habits of Highly Effective People." These traits include an individual's ability to be proactive in their responsibilities, initiate tasks with a clear vision of the desired outcome, prioritize effectively, and consistently aim for positive results. It also emphasizes the importance of understanding others before seeking to be understood and fostering a collaborative and synergistic approach in all activities. This tool is designed to pinpoint these essential habits in individuals, providing insight into their effectiveness and approach to various tasks, as illustrated in Figure 4 (Covey, 2020). These personality traits are significantly influenced by factors such as knowledge, skill, and desire. The enduring nature of these traits is highlighted by their increasing relevance in challenging environments. As individuals encounter more complex situations, the importance and applicability of these traits grows, underlining their timeless and adaptable nature. This relationship indicates that as the complexity and demands of an individual's environment intensify, the more critical and beneficial these personality traits become in navigating and succeeding in such settings (Covey, 2020).

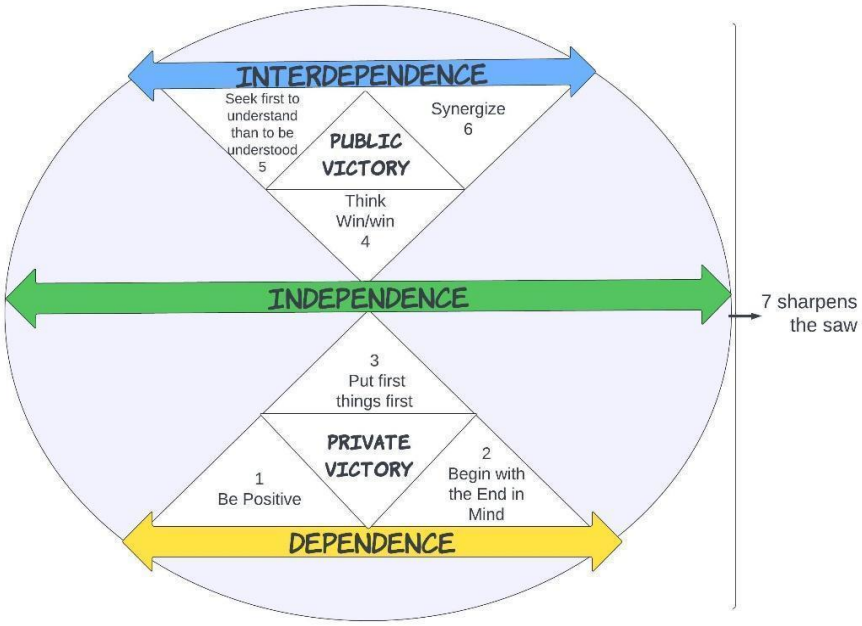

Figure 5:Covey's The Seven Habits of Highly Effective People (Adapted from Covey, 2020)

From Figure 5, Covey explained that individuals progress through three stages of traits: 'dependence,' 'independence,' and 'interdependence,' as part of the process to 'sharpen the saw.' Achieving self-reliance requires exercising proactivity and initiating tasks with a clear vision of the desired outcome, thereby attaining personal success. Additionally, reaching a state of interdependence involves adopting a collaborative approach, prioritizing understanding others before seeking to be understood, and integrating these traits to achieve collective success among peers and colleagues. Balancing personal and collective achievements leads to true independence, and all these habits together contribute to 'sharpening the saw,' which means becoming highly effective in various environments.

To assess individual habits, Table 2 presents a ranked set of criteria that underscores the importance of achieving each habit.

Table 2:Covey order of importance measures of habits

Order of importance	Covey's measures
1	Taking Initiative
2	Start with a clear goal or outcome in view.
3	Prioritize first things first
4	Think positive outcomes
5	Prioritize understanding others before seeking to be understood
6	Consistently collaborating and combining efforts
7	Continuously striving for self-enhancement through learning and skill development.
8	Exceptional cognitive capability
9	A natural inclination towards collaborative work
10	Eagerly engaged with your work setting, including its financial and legal aspects

According to Durodola et al. (2012), a study applying Covey's "Seven Habits of Highly Effective People" found that facility managers and general managers exhibit similar qualities in advancing an organization's goals and objectives. The study highlighted that both types of managers receive feedback on their roles' progress and effectiveness primarily from the users of the facilities they manage. This feedback is vital as it helps in making strategic adjustments and enhancing management approaches. Such insights are crucial for aligning facility management with the changing needs and expectations of users, thereby improving overall organizational efficiency and satisfaction.

Another method for assessing personality traits is the "Big Five personality traits (i.e., extraversion, agreeableness, conscientiousness, neuroticism and openness to experience" (Ameer

et al., 2022). This framework was developed by John and Srivastava (1999) to measure personality traits through forty-four items, with nine items assessing conscientiousness and eight items assessing extraversion. This approach has evolved into a concise yet effective framework for understanding the interrelations of personality traits across various industries (Costa Jr & McCrae, 1992). Conscientiousness involves being methodical, well-organized, and goal oriented. Neuroticism pertains to emotional stability, impulse control, and anxiety levels. Extraversion is characterized by being outgoing, assertive, and communicative. Openness involves intellectual curiosity and a preference for new experiences and diverse ideas. Agreeableness is evident in individuals who are cooperative, helpful, and empathetic towards others. There is increasing evidence indicating a complex interaction between personality, motivation, and individual learning styles. It is recommended that educators broaden their focus beyond just cognitive aspects (Miller, 1991).

In their study, Moore and Vucetic (2014) explored the 'big five' personality traits, focusing on conscientiousness as a key factor for project success. They explained how this trait, defined by diligence, organization, and goal orientation, is essential in steering project outcomes towards success. Their findings underscore the profound influence of conscientiousness on overall performance and the achievement of project goals. Besides the mentioned measures, the Myers-Briggs Type Indicator (MBTI) is another tool used for classifying personality traits. This instrument categorizes and explains individual personality types based on specific characteristics, providing a comprehensive framework for understanding the various aspects of human personality (McCrae & Costa, 1989). The MBTI facilitates a detailed exploration of different personality profiles and how these traits manifest in various scenarios, particularly in professional environments.

This method provides a valuable understanding of the different aspects of individual personalities, offering insights into how these traits affect behavior, interactions, and performance in various workplace settings. The Myers-Briggs Type Indicator (MBTI) stands out as one of the most frequently used and recognized tools for identifying personality types (McCrae & Costa, 1989). The primary goal of the MBTI is to ascertain individuals' natural tendencies in perception and judgment based on their self-reported responses to typical situations. This approach helps in understanding how each preference, both individually and collectively, influences behavior. The acquired knowledge is then applied to practical situations and informs further research (McCrae & Costa, 1989). The MBTI categorizes personality into sixteen distinct types, organized across four scales, as illustrated in Table 3 (Borzumato-Gainey, 2017).

Table 3:Sixteen factors of Myers-Briggs Types Indicator (MBTI)

MBTI Factors	**Four Scales**
ISTP	(Introvert, Sensing, Thinking, Perceiving)
ISTJ	(Introvert, Sensing, Thinking, Judging)
ISFJ	(Introvert, Sensing, Feeling, Judging)
ISFP	(Introvert, Sensing, Feeling, Perceiving)
ESTP	(Extrovert, Sensing, Thinking, Perceiving)
ESFP	(Extrovert, Sensing, Feeling, Perceiving)
ESTJ	(Extrovert, Sensing, Thinking, Judging)
ESFJ	(Extrovert, Sensing, Feelings, Judging)
INFJ	(Introvert, Intuitive, Feelings, Judging)
INTJ	(Introvert, Intuitive, Thinking, Judging)
INFP	(Introvert, Intuitive, Feelings, Perceiving)
ENFP	(Extrovert, Intuitive, Feelings, Perceiving)

INTP	(Introvert, Intuitive, Thinking, Perceiving)
ENTP	(Extrovert, Intuitive, Thinking, Perceiving)
ENFJ	(Extrovert, Intuitive, Feelings, Judging)
ENTJ	(Extrovert, Intuitive, Thinking, Judging)

The MBTI tool has been utilized to evaluate project managers, showing that to thrive in their leadership roles within projects, these professionals must align with specific categories of the MBTI factors. This alignment helps project managers leverage their natural tendencies in perception and judgment, which in turn enhances their effectiveness in managing and leading projects. (D. R. Gehring, 2007).

- ISTJ (Introvert, Sensing, Thinking, Judging)
- INTJ (Introvert, Intuitive, Thinking, Judging)
- ENTP (Extrovert, Intuitive, Thinking, Perceiving)
- ESTJ (Extrovert, Sensing, Thinking, Judging)
- ENFJ (Extrovert, Intuitive, Feelings, Judging)
- ENTJ (Extrovert, Intuitive, Thinking, Judging)

These personality trait measures have been successfully applied across various industries to identify individual traits and understand their impact on job performance, leadership skills, and the utilization of unique traits for career success. For this study, the focus will be on the human dimensions tool. This tool was used to investigate the different personality traits between entry-level employees and senior executives in the facilities management industry. The objective was to determine how these traits significantly influenced the broader facilities management sector, particularly in recruitment, talent development, and employee retention. This targeted approach

aimed to provide insights that could improve the industry's overall efficiency and effectiveness in managing its human resources.

2.6 SELECTION OF HUMAN DIMENSION AS AN ASSESSMENT

2.5.1 INTRODUCTION TO HUMAN DIMENSION

The built environment sector significantly depends on human resources, necessitating various strategies to manage the workforce effectively. Implementing diverse approaches is crucial to ensuring human capital is utilized and managed efficiently within the industry. According to Delaney & Huselid (1996), the workforce is the key to success in any organization. This sector's workforce consists of individuals with a wide range of distinct personality traits. When these differing personalities clash, it can lead to tensions and conflicts, potentially hindering the organization's objectives (Lykourentzou et al., 2016). Some individuals naturally gravitate towards leadership roles and tend to make rapid decisions, while others adopt a more contemplative approach, thoroughly analyzing situations before deciding. Recognizing and effectively managing these distinct personal traits within an organization is crucial for the success of each individual in their respective job roles (Oedekoven & Hay, 2010).

Given the diversity in behavioral traits, it was important to tailor interactions to align with the most effective response styles. Therefore, utilizing human dimensions as a tool to assess personality and various aptitudes became relevant. This approach enabled organizations to gain clearer insights into how prospective employees might behave in a work environment, based on their reactions to information, emotional scenarios, problem-solving situations, and social interactions as revealed through this assessment (Livadas, 2014). To address workforce challenges

and issues efficiently, the need for a suitable human resource management tool was paramount. Such a tool needed to adeptly recognize the various personality traits present in individuals, thereby assisting stakeholders in navigating decisions related to recruitment, nurturing talent, encouraging productive teamwork, and overseeing promotional activities. This comprehensive tool played a critical role in not only identifying but also understanding and leveraging the diverse characteristics of the workforce to optimize organizational processes and foster a harmonious work environment.

Choosing the Human Dimension tool was pivotal for organizations aiming to assess personality traits and aptitudes. This tool provided insights into how professionals in facility management functioned and responded within a particular organization, especially when presented with data related to information processing, emotional responses, problem-solving approaches, and social interactions. It served as a comprehensive guide, helping to understand the dynamics of how these professionals interacted with their environment and colleagues, thereby facilitating better integration and functionality in the organizational context (Livadas, 2014). To accurately discern the personality traits of facility professionals at both entry-level and senior executive positions, the Human Dimension assessment tool integrated three thoroughly designed and methodically organized evaluations. These included the HEXACO Personality Inventory, which explored various aspects of an individual's character; the QDiSC Behavioral Instrument, focusing on behavioral tendencies and patterns; and the Emotional Intelligence Quotient, measuring emotional awareness and management capabilities. This combination of assessments provided a multi-faceted approach to understanding the diverse personality profiles within these professional levels (Maali et al., 2022).

2.51.1 HEXACO PERSONALITY INVENTORY

Gao et al. (2020) highlighted the HEXACO-60 Personality Inventory for its exceptional reliability, scoring an impressive 0.89. This high level of dependability distinguishes it from other personality assessment tools, such as those by Hogan and Eysenck. The HEXACO-60's reliability emphasizes its effectiveness in accurately measuring personality traits, making it a preferred choice over other inventories in the field. The robustness of the HEXACO-60 was demonstrated through its application across a diverse participant pool. This concise tool, which evaluates the six dimensions of the HEXACO personality model, was administered not only to college students but also to a broader demographic of adults from various community backgrounds. Its effectiveness and accuracy in capturing the nuances of personality traits across these varied groups underscored its reliability and applicability in different contexts (Ashton & Lee, 2009).

The outcomes of the HEXACO-60 assessment showcased exceptionally strong internal consistency and reliability, with notably low correlations among its different scales. This high degree of reliability was further confirmed when compared to the well-known 'Big Five Personality Factors,' which include Extraversion, Stability under Pressure, Friendliness, Responsibility, and Openness to New Experiences (Buecker et al., 2020). The HEXACO-60, developed into a six-dimensional tool, provides a more detailed analysis of personality profiles. This comparison underscored the HEXACO-60's strength and dependability in accurately assessing personality traits, reinforcing its value in personality evaluation (Ashton & Lee, 2009). In the construction sector, extensive research has employed the HEXACO Personality Inventory to develop a conceptual framework that explores the connections between the personality traits of construction project managers and their perception of risk. A study by Wang et al. (2016) identified a link between certain HEXACO personality traits—namely Extraversion, Agreeableness, and

Conscientiousness—and the inclination towards risk, as well as the perception of risk among these project managers. This finding highlights the significant interaction between the inherent personality traits of construction project managers and their attitudes and perceptions towards various risk factors in their projects.

The comprehensive evaluation conducted with the HEXACO-60 highlights its effectiveness in accommodating a diverse range of demographic groups. Its ability to provide reliable insights into personality traits underscores its thorough nature. This detailed assessment demonstrates the tool's proficiency in accurately capturing and reflecting the subtleties of personality across various population segments, thereby emphasizing its versatility and dependability in the field of personality assessment (Ashton & Lee, 2009).

2.5.1.2 Q-DiSC BEHAVIORAL INSTRUMENT

The Q-DiSC Behavioral Instrument is extensively used by professionals across various industries, especially during the transition from university to professional environments. This instrument is based on temperament principles, examining how individual natures influence behavior in both one-on-one and group interactions (Wichard & Kees, 2006). It is frequently applied to understand and facilitate the shift of entry-level professionals into industry roles (Jones & Hartley, 2013). According to Cheah (2020), other studies have favored the Q-DiSC behavioral instrument due to its effectiveness in detailing how professional traits interact within team dynamics and the specific roles individuals occupy within these teams. This tool is valued for its ability to provide clear insights into how personality traits impact both team collaboration and individual responsibilities (Childs et al., 2017). Additionally, the credibility and reliability of the Q-DiSC Behavioral Instrument have been validated through studies that conducted thorough analyses of its psychometric properties (Price, 2015).

In the construction sector, the Q-DiSC behavioral assessment was employed to develop an index that predicts knowledge and behavioral traits. This tool was specifically tailored to help senior students in construction management programs assess their compatibility with a company's organizational structure and their potential career trajectories (Emmer & Brunhoeffer, 2015). The study was conducted in three phases: first, senior management from two companies were interviewed to understand their hiring criteria. This was followed by conducting behavioral surveys among recent graduates and alumni of construction programs. Additionally, physical copies of these surveys were distributed to industry professionals at a university-hosted career fair. The results were quite enlightening, revealing that graduates and alumni had a better understanding of their strengths and weaknesses, which were then compared to the expectations of industry professionals who might be their future employers. The insights from this study played a crucial role in improving the construction management curriculum at the university level, emphasizing the development of students' skills to better prepare them for industry demands (Emmer & Brunhoeffer, 2015).

The findings from these studies confirmed that the Q-DiSC Behavioral Instrument demonstrated a high level of internal consistency and reliability, thereby validating its effectiveness in accurately assessing personality traits. Furthermore, it was noted that the tool is straightforward and manageable, not requiring any formal educational background or specific training for its effective use (Agung & Yuniar, 2016). Due to these factors and the significant value, it provides, the Q-DiSC Behavioral Instrument was identified as a crucial tool for this study. Its selection is based on its proven effectiveness, ease of use, and the comprehensive insights it offers into behavioral traits. These attributes make it especially suitable for the objectives of this study, leading to its adoption as a primary assessment instrument. The decision is supported by the

instrument's capability to deliver detailed and reliable evaluations, which are essential for the in-depth analysis needed in this research.

2.5.1.3 EMOTIONAL INTELLIGENCE

The foundational Emotional Intelligence benchmarking tool in the built environment was developed based on an examination of 21 components from the Bar-On Emotional Quotient-Inventory (EQ-i) (Songer et al., 2004). This tool is widely used in studies related to job performance, encompassing extensive research involving hundreds of thousands of individuals across various industries (Cheah, 2020). Additionally, it has been acknowledged for its ability to highlight the extent of job performance variation among professionals from middle management to senior leadership roles (Bradberry & Greaves, 2009). When compared to other measures like the MSCEIT, the Emotional Intelligence tool demonstrated a significant standard regression weight, while the MSCEIT did not show such significance. This comparison underscores the distinct analytical strengths of the Emotional Intelligence tool, particularly its effectiveness and reliability in capturing aspects that the MSCEIT might not fully address. This distinction highlights the robustness of the Emotional Intelligence tool in providing insightful and statistically significant data for emotional intelligence assessment (Bradberry & Greaves, 2009). Consequently, the advantages of using the Emotional Intelligence tool have been validated, with the time required for completion being relatively short. This validation confirms the tool's effectiveness and efficiency, making it a practical choice for comprehensive assessment without demanding a significant time investment. Its ability to deliver valuable insights quickly enhances its suitability for various settings, especially in professional contexts where time efficiency is crucial (Sunindijo & Hadikusumo, 2014).

A study conducted in the construction industry assessed the impact of Emotional Intelligence on conflict resolution strategies among project manager engineers. It found that engineers with high Emotional Intelligence tended to use an accommodating style to resolve conflicts, which was influenced by their collective cultural background. Furthermore, these emotionally intelligent engineers were adaptable and adept at using a collaborative conflict-resolution approach. This method enabled them to negotiate win-win outcomes effectively, ensuring the satisfaction of all parties by balancing various interests and identifying mutually beneficial solutions (Sunindijo & Hadikusumo, 2014).

These comprehensive assessments encompass critical aspects for identifying personality traits within the built environment, particularly in the challenging field of facility management. Utilizing the three components of the Human Dimension tool allows for an in-depth exploration of various personality profiles. This thorough analysis is crucial for understanding the workforce's complexities in facility management. The wide-ranging nature of these tools ensures a complete comprehension of the unique characteristics and behaviors present in this sector, which is essential for enhancing the management and utilization of human resources. Table 4 below summarizes the assessment tools, detailing their similarities, differences in the dimensions they measure across industries, and their utility in identifying diverse personality traits within the facility management industry.

Table 4:Summary of the assessment tools

HEXACO Personality Inventory	DiSC Behavioral Instrument	Emotional Intelligence
Remarkable Reliability Score (Gao et al., 2020)	Assess a shift of younger professions into the industry (Jones & Hartley 2013)	Assessed job performance of hundreds of thousands of individuals (Cheah 2020)
It is versatile (Ashton & lee 2009)	Provide clear insights on team collaborations and individual responsibilities (Childs et al., 2017)	Assess job performance from middle management to senior leadership roles (Bradberry & Greaves 2009)
Ability to provide accurate assessments (Ashton & lee 2009)	It is reliable and credible (Price 2015)	It is insightful and provides statistically relevant data (Bradberry & Greaves 2009)
Extensive use in the construction industry (Wang et al., 2016)	It is straightforward and manageable (Agung & Yuniar 2016)	It provides a comprehensive assessment (Sunindijo & Hadikusumo 2014)
Interaction between the HEXACO traits and risk perception among project managers (Wang et al., 2016)	No formal education to use the tool (Agung & Yuniar 2016)	Less time commitment to use (Sunindijo & Hadikusumo 2014)
It is comprehensive in nature (Ashton & lee 2009)	Likened to the temperament principles (Wichard & Kees 2006)	Helped in conflict resolution(Sunindijo & Hadikusumo 2014)

Therefore, it became essential to scrutinize the Human Dimensions in the methodology to determine their effective utilization for the study's objectives. However, the literature review identified specific gaps that could potentially be addressed.

2.7 GAPS IN LITERATURE

A comprehensive review of the current literature has identified several research gaps that this study aims to address. These gaps include:

- Research related to Human dimensions within the Facility management industry.

Currently, there is a notable deficiency in research focused on identifying personality traits within the facility management industry. The sole existing study, which applied Covey's 2004 personality trait tool, was conducted in 2012 and specifically examined facility managers in Nigerian hotels. There is a clear absence of literature exploring other tools, particularly the human dimension tool, for assessing the personality traits of facility managers. This gap highlights a significant research opportunity. The upcoming study, centered in the United States, aims to address this gap and provide valuable insights into the field of facility management.

- Research related to established levels of the facility manager.

In many sectors, a well-defined framework clearly distinguishes between entry-level professionals and senior executives, supported by extensive literature detailing these roles. However, this clarity is lacking in the facilities management sector, where comprehensive literature outlining the different hierarchical levels is notably absent. This gap poses a challenge, as the undefined job roles for facility managers create ambiguity. This lack of clarity impacts current professionals and hinders new graduates entering the field from understanding their potential career paths in the industry.

- Scarcity regarding the use of human dimensions in evaluating personality traits among the various job levels in the built environment.

The limited literature on the various roles within facility management has led to a gap in understanding how the Human Dimension tool could be utilized to identify the distinct personality

traits required at different levels, from entry-level positions to senior executive roles shaped by extensive industry experience. In other sectors of the built environment, the Human Dimension tool has proven effective, positively influencing workforce management and human resource practices. Research into the application of this tool within facility management could provide valuable insights. Specifically, it could clarify the personality trait differences across job levels in facility management and explore how this knowledge can improve human resource processes.

CHAPTER 3: METHODOLOGY

3.1 OVERVIEW OF THE RESEARCH METHODOLOGY

The methodology of this study consisted of five distinct phases, as shown in Figure 6. The research began with an initial examination of the IFMA succession planning report, which focused on addressing the challenges posed by the influx of new professionals into the facility management sector. This preliminary phase was essential for understanding the industry's need to effectively transfer knowledge from seasoned professionals to newcomers, thereby ensuring continuity and the preservation of expertise.

This initial investigation underscored the need to identify tools capable of capturing the expertise of seasoned professionals, aiming to establish a structured framework for future facility managers. Subsequently, a thorough literature review was conducted to identify existing gaps in the facility management industry, particularly concerning the identification of personality traits and differentiation of job levels. This step was crucial to determine whether previous research had employed other tools, the benefits derived from their use, and whether there was a need to expand on existing theories or explore new tools for assessing personality traits in the industry.

Recognizing the absence of comprehensive literature on personality traits and job levels in facility management spurred this research to address these gaps. The Human Dimension tool was chosen for its inclusiveness, integrating three separate assessments to cover all necessary traits. IFMA launched a volunteer survey via Qualtrics on September 11th, 2023, to recruit participants globally. This survey gathered demographic data from approximately 2,500 individuals to facilitate future participant identification for the Human Dimension survey. The main Human

Dimension survey was administered on January 15th, 2024, through Qualtrics and conducted in multiple languages to reach a broad audience, as suggested by the initial volunteer survey. The data for analysis was provided anonymously. Additionally, the data from IFMA's global Human Dimension study, specifically from the United States, was analyzed using SPSS software and Pivot Tables.

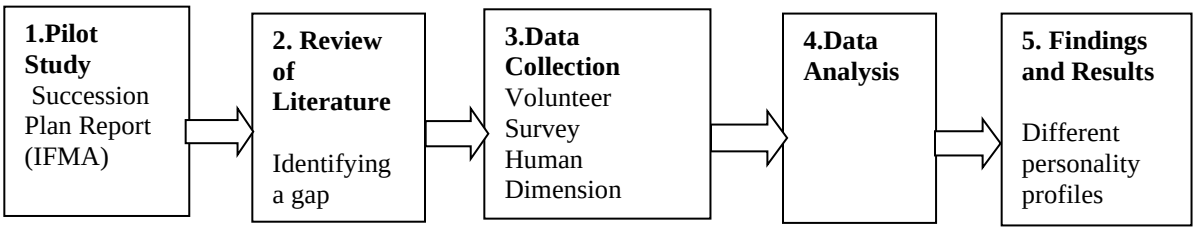

Figure 6: Methodology

3.2 VOLUNTEER SURVEY

The survey was meticulously prepared and organized with the support of IFMA professionals and university professors and researchers from various institutions. It collected demographic data from roughly 2,500 individuals to assist in future participation of the Human Dimension survey. The primary aim of this volunteer survey was to assess professionals' interest in the Human Dimension tool for succession planning. Additionally, it aimed to gather personal information from professionals, enabling the research team to provide individual personality trait reports to help participants identify their traits. Subject matter experts developed a series of demographic questions to establish the necessary infrastructure for analyzing subsequent survey responses. This volunteer survey, targeting facility managers globally, was designed on Qualtrics to be completed in just two minutes, thereby aiming to attract significant interest among professionals.

3.3 HUMAN DIMENSION ASSESSMENT

This assessment was developed and utilized in this study through a web-based platform, incorporating three assessment tools: the HEXACO Personality Inventory, the Emotional Intelligence (EI) Assessment, and the Q-DiSC Behavioral Instrument. HEXACO assessed personality traits, EI evaluated emotional intelligence, and DiSC analyzed behavioral reactions. Each of these measures played a significant role in the construction industry. The subsequent sections delve deeper into the specifics of each individual assessment.

3.3.1 HEXACO PERSONALITY INVENTORY

The researchers Lee & Ashton, (2018) developed this comprehensive tool HEXACO Personality Assessment (HEXACO) and they determined that the six major facets to be Honesty-Humility(H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C) and Openness(O). To measure the personality traits of individuals the major facets are given a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) which indicates your level of each area of the HEXACO assessment. This study utilized the HEXACO-60 that consisted of 60 questions and the following further explains the HEXACO facets in detail (Lee & Ashton, 2018).

- Honesty-Humility (H): Sincerity, Fairness, Greed Avoidance, and Modesty.
- Emotionality (E): Fearfulness, Anxiety, Dependence, and Sentimentality.
- Extraversion (X): Social Self-Esteem, Social Boldness, Sociability, and Liveliness.
- Agreeableness (A): Forgiveness, Gentleness, Flexibility, and Patience.
- Conscientiousness (C): Organization, Diligence, Perfectionism, and Prudence.
- Openness to Experience(O): Aesthetic, Appreciation, Inquisitiveness, Creativity, and Unconventionality.

Honesty-Humility: Individuals who score highly on the Honesty-Humility scale tend to shun exploiting others for their own benefit, show little interest in violating norms for self-advancement, are indifferent to extravagant wealth and luxury, and do not feel entitled to a higher social standing. On the opposite end, those with low scores in this area are likely to use flattery as a tool for personal gain, are willing to bend rules for their own benefit, are driven by the pursuit of material possessions, and possess a pronounced sense of self-importance.

Emotionality: Individuals scoring exceptionally high on the Emotionality scale often feel apprehensive about physical threats, react with anxiety to stressful situations, seek emotional support from others, and experience strong feelings of empathy and emotional connections with others. In contrast, those with minimal scores in this area are generally unfazed by potential physical risks, maintain composure in stressful circumstances, rarely feel the need to confide in others about their problems, and tend to remain emotionally uninvolved with others.

Extraversion: Individuals who achieve high scores in the Extraversion scale typically have a strong self-image, are comfortable in leadership roles or when speaking to groups, relish in social events and interactions, and exhibit feelings of vigor and excitement. On the other hand, those who score low in this domain often view themselves as less favored in social circles, experience discomfort in the spotlight during social encounters, show little interest in social gatherings, and generally exhibit lower levels of vitality and positivity compared to others.

Agreeableness: Individuals who attain high levels on the Agreeableness scale are inclined to pardon offenses against them, show tolerance in evaluating others, display a readiness to make concessions and collaborate, and manage their anger effectively. In contrast, those with minimal scores in this area are prone to harboring resentment towards those who have wronged them, tend

to be judgmental about the faults of others, steadfastly maintain their own opinions, and often react with anger when they feel wronged.

Conscientiousness: Individuals scoring exceptionally high in Conscientiousness typically manage their time and space efficiently, are disciplined in pursuing their objectives, aim for precision and flawlessness in their work, and consider their choices thoughtfully. On the flip side, those who score low in this domain often show little interest in maintaining organization or adhering to schedules, shy away from demanding tasks or ambitious objectives, accept work that may not be error-free, and tend to make spontaneous decisions without much contemplation.

Openness: Individuals who achieve high marks in Openness often find themselves deeply engaged with the aesthetics of art and nature, exhibit a strong curiosity across diverse fields of knowledge, frequently employ their imagination in daily life, and show an openness to unconventional ideas or individuals. In contrast, those with low scores in this category typically don't find much appeal in artistic works, display limited intellectual inquisitiveness, steer clear of creative activities, and show minimal interest in notions or people that are seen as unconventional or avant-garde.

Honesty-Humility	Emotionality	eXtraversion	Agreeableness	Conscientiousness	Openness to Experience
Sincerity	Fearfulness	Social Self-Esteem	Forgiveness	Organization	Aesthetic Appreciation
Fairness	Anxiety	Social Boldness	Gentleness	Diligence	Inquisitiveness
Greed Avoidance	Dependence	Sociability	Flexibility	Perfectionism	Creativity
Modesty	Sentimentality	Liveliness	Patience	Prudence	Unconventionality

Figure 7:HEXACO Personality Inventory

3.3.2 EMOTIONAL INTELLIGENCE ASSESSMENT

For this research, the Emotional Intelligence Appraisal, which is a skill-focused assessment of emotional intelligence created by Drs. Travis Bradberry and Jean Greaves, was employed (Bradberry & Greaves, 2009).This measurement, draws on Goleman's four-factor model, concentrating on a person's capacity to comprehend their own emotional state, regulate reactions to these emotions, identify the emotions of others, and effectively engage with others by responding appropriately to their emotional states. The Emotional Intelligence Appraisal included 28 questions, where participants specified the frequency of certain behaviors they exhibit. The questions were framed using the Likert scale, with 1 being "strongly disagree," 5 as "neutral," and 10 representing "strongly agree." The scores obtained aim to evaluate the participant's ability to identify and regulate their feelings as well as understand and manage the emotions of others. Emotional Intelligence (EQ) is broadly divided into one’s competence (Self-Management) and social competence (Social-Awareness and Relationship Management).

Self-Management (SM): An individual's capacity to leverage emotional understanding to remain adaptable and guide their actions in a positive direction.

Social Awareness (SOA): An individual’s ability to accurately perceive emotions in others and truly understand their state, coupled with managing relationships.

Relationship Management (RA): An individual’s capacity to adeptly navigate interactions by being attuned to both their own emotions and the feelings of others.

Overall EQ: Professionals collective emotional intelligence assessment scores comprising of their social awareness, relationship management and self-management scores.

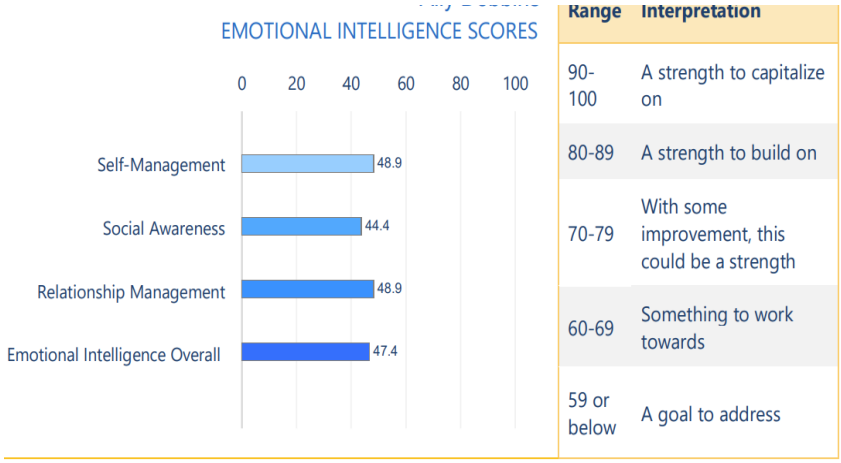

Figure 8:Emotional Intelligence Assessment

3.3.3 Q-DiSC BEHAVIORAL INSTRUMENT

The DiSC Behavioral Instrument is a four-quadrant model rooted in the research of psychologist William Moulton Marston, PhD., whose focus was on understanding individuals' emotions, actions, and interactions within their surroundings (Slowikowski, 2005). This version offered insights into the respondent's preferences and priorities in their professional environment. A key factor for choosing a version of DiSC was its distinction as one of the mere four human dimension evaluation tools employed by various construction firms in a national survey targeting commercial contractors (Childs et al., 2017). In this research, the QDiSC-101 model, a variant crafted by Dr. Avi Wiezel of the four-quadrant behavior analysis tool, was employed. The four-quadrant tool is further divided into work orientation ranging from task-focused to people-focused and communication approach from reserved or outspoken. The scoring system used a scale that spanned from -4 to +4 for both work orientation and communication style. Based on these the tool was majorly categorized into

Dominant: Individuals with a dominant personality are often proactive and energetic when it comes to addressing issues and overcoming obstacles. They are characterized by traits such as assertiveness, tenacity, resilience, motivation, ambition, vigor, and a trailblazing spirit.

Inspiring: People who are inspiring typically sway others through their communication and actions, often displaying emotional tendencies. They are known for being charismatic, engaging, tactful, energetic, convincing, approachable, expressive, trusting in others, and having a positive outlook.

Supportive: Individuals who are supportive often prefer consistency, security, and are averse to abrupt changes. They are characterized by their tranquility, ease, patience, a tendency to hold on to things, predictability, thoughtful actions, steadiness, reliability, and usually display a lack of emotional expression, often maintaining a stoic demeanor.

Cautious: Individuals who are cautious typically place a high value on following rules, adhering to guidelines, and maintaining structure. They have a strong preference for producing quality work and aim to get it right on their first attempt. These people are often seen as meticulous, prudent, precise, orderly, methodical, considerate, precise in their work, and diplomatic in their interactions.

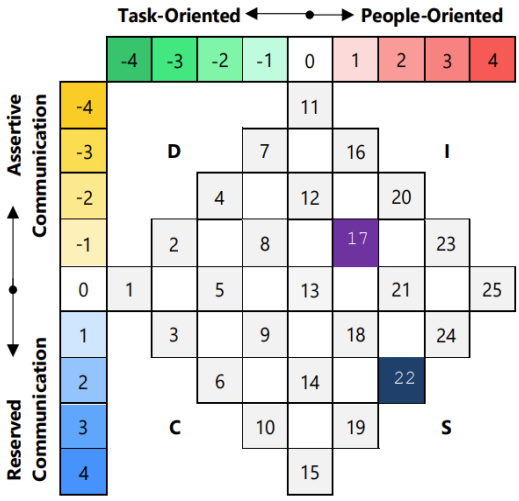

Figure 9:Q-DiSC Behavioral Assessment

For the purposes of this study, the individual respondents will be evaluated using the DiSC behavioral assessment, focusing on people-oriented and reserved communication styles, along with the overall QDiSC-101 scores on the scale.

In conclusion, this methodology provides a strong basis for understanding how personality traits, behavioral tendencies, and managerial effectiveness interact in the facility management industry. The thorough approach used in this study not only fills existing gaps in the literature but also offers a useful framework for future research and practical applications in succession planning and professional development within the facility management industry and other industries.

CHAPTER 4: DATA COLLECTION

4.1 SURVEY PREPARATION

To gather the data required for this study, two comprehensive and robust surveys were carried out to ensure the study's goals and objectives were met. The two primary surveys utilized for this purpose were the volunteer survey and the human dimension survey. These surveys were meticulously designed to fulfill the study's needs. Although each survey had its unique characteristics, they shared a common feature: both were created and administered using the Qualtrics web-based platform, chosen for its highly interactive interface and ease of use. The distinctions in the preparation of these surveys are outlined below.

Volunteer Surveys

The volunteer survey was distributed by IFMA to facility managers within its 22,000-member network, as well as to facility managers globally who were not members of IFMA. Survey preparation commenced around August 2023, and within approximately five weeks, subject matter experts formulated the survey questions. This international distribution utilized social media channels for broader reach, resulting in 2,500 professionals expressing readiness to participate in the main survey. The survey, designed to be completed in less than two minutes, provided contact information for an IFMA member to assist with any inquiries. Administered via Qualtrics, this volunteer questionnaire comprised 8 questions aimed at gathering personal data and information from professionals. These questions were categorized into three groups based on the study's scope,

derivation, and source: informed consent, employment details, and personal details. The categories of the volunteer questionnaire are listed in Table 5 below.

Table 5:Demographic questions

INFORMED CONSENT
With full knowledge of all foregoing, I agree, of my own free will, to participate in this survey?
EMPLOYMENT DETAILS
● What is your name and email address? ● Which of the following best describes your primary job function (where you spend the majority of your time) within Facility Management or related field? ● Do you consider your current job on the managerial or technical path? ● Are you employed directly by the facility owner (in-house) or a third-party contractor (outsourced) that provides services to the facility owner? ● Which of the following best describes your current position level within your organization? ● How many total years of management experience do you have that are directly related to working in Facility Operations / the built environment?
PERSONAL DETAILS
● When were you born ● What is the highest level of education you have attained? ● In which continent do you currently reside?

The responses were securely stored on the Qualtrics web servers, and the personal information of respondents was collected and organized to prepare for the main Human Dimension survey. Throughout the preparation phase for the subsequent survey, ongoing engagement was maintained with the 2,500 volunteers.

Human Dimension Surveys

The survey was designed to cater to a wide array of industries, with a particular focus on evaluating the personality traits of professionals. After evaluating multiple personality assessment tools, the team chose the HEXACO Personality Inventory, Emotional Intelligence, and DiSC Behavioral Assessment due to their reliability and extensive global usage among professionals.

The survey was designed to be self-paced, incorporating a feature that prevents respondents from revisiting previously answered questions. To encourage maximum participation, all questions were translated into six languages on Qualtrics, ensuring broad accessibility for volunteers. The survey required approximately twenty to thirty minutes to complete and provided each respondent with a detailed report of their personality traits in an easily understandable format. The assessment framework was sent to the 2,500 volunteers who participated in the initial survey, with each participant receiving a unique survey link to prevent sharing.

The survey was divided into four sections: a consent form, the HEXACO Personality Inventory, the Emotional Intelligence Assessment, and the DiSC Behavioral Assessment. This assessment survey was distributed in February 2024 and concluded in April 2024. During this period, regular reminders were sent to ensure strong participation and comprehensive data collection. The meticulous preparation and implementation of this survey aimed to deliver a detailed and precise analysis of the personality traits of facility management professionals. Table 6 outlines the questions included in each section.

Table 6:Breakdown of Human Dimension Questions.

Sections	Number of Questions
Consent Form	5
HEXACO	61
Emotional Intelligence	7
DiSC	24

4.2 DATA DESCRIPTION

The study employed various key variables for both descriptive and statistical data analysis, categorizing them by the type of responses. As illustrated in Figure 10, the dataset was divided into independent and dependent variables, encompassing both ordinal and dichotomous variables.

The ordinal variables were used specifically to examine personality traits, which acted as the dependent variables in this research. These traits were recorded using a Likert scale ranging from 1 to 10, where 1 indicated "Strongly Agree" and 10 indicated "Strongly Disagree." This detailed scale allowed for a nuanced analysis of the participants' personality traits, offering insights into varying levels of agreement or disagreement. This approach facilitated a comprehensive examination of the personality traits among the facility managers involved in the study.

On the other hand, the dichotomous variable was used to classify the professional levels of the respondents. This variable was categorized as either Level 1 (entry-level) or Level 5 (senior executive) and served as an independent variable. Participants were required to choose one of these two categories.

This method enabled a thorough analysis of the data, providing deeper insights into the relationships between the participants' personality traits and their respective professional levels.

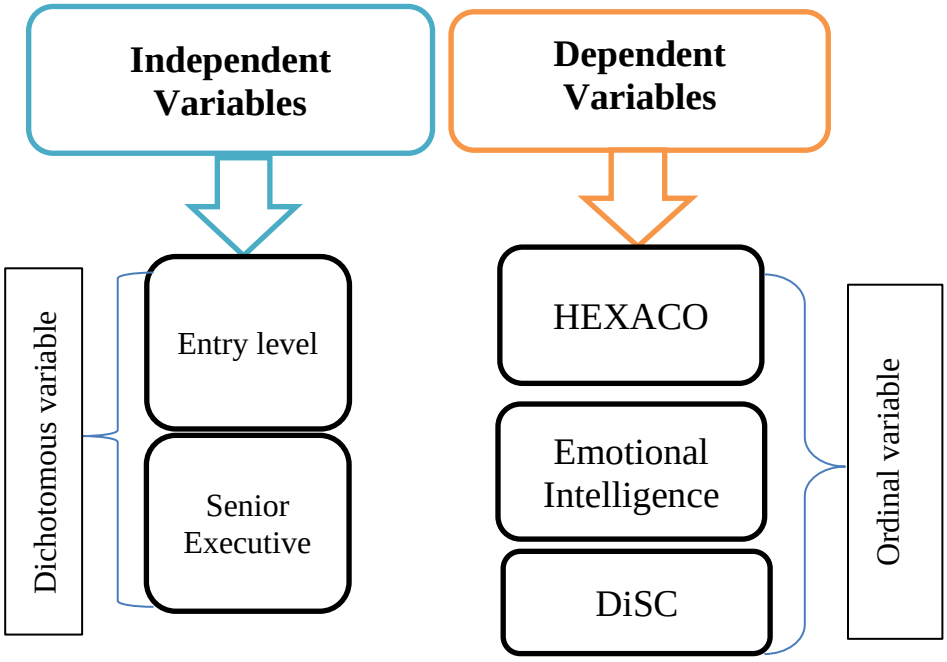

Figure 10:Data description

The development of both surveys underwent rigorous scrutiny and meticulous planning to ensure an accurate assessment of personality traits. While the independent and dependent variables have already been identified, this study also aimed to explore additional demographic factors to identify various personality traits among facility managers in the United States. Specifically, the study examined independent variables such as age, institution, job functions, educational levels, and geographic regions within the United States. The dependent variable remained constant in the subsequent analysis of these new independent variables. Tools such as Pivot Tables, IBM SPSS, and Microsoft Excel were utilized to analyze these variables.

CHAPTER 5: DATA ANALYSIS

5.1 DEMOGRAPHICS ANALYSIS USING PIVOT TABLES

This section thoroughly examined the various demographics of the facility managers under analysis, without directly comparing them to personality traits. The demographics reviewed included, but were not limited to, age, institutions, job functions, gender, mentorship, and educational levels. To ensure a comprehensive understanding, the data was presented in tables.

Table 7:Demographic distributions 1

DEMOGRAPHICS	% OF RESPONDENT
JOB LEVELS	
Entry Level	**33%**
Senior Executives	**67%**
AGE	
Prior to 1946	**2%**
1946-1964	**40%**
1965-1978	**42%**
1979 or later	**16%**
GENDER	
Female	**35%**
Male	**65%**
EDUCATIONAL LEVEL	
No degree	**12%**
High school graduate/ equivalent	**2%**
Associate degree	**11%**
Bachelor’s degree	**36%**
Graduate Degree	**39%**
JOB PATH	

In-house	**81%**
Outsourced	**19%**

Job Level : This study concentrated on entry-level managers who supervise staff without additional supervisory assistance and senior executives who oversee multiple tiers of managerial staff. This analysis highlighted the number of respondents at the entry level compared to those at the senior executive level for a comprehensive evaluation.

Age: This study examined the age differences among facility managers in the United States, focusing on three specific age groups: individuals born before 1946, between 1946 and 1964, and after 1979. Facility managers born before 1946 had the lowest response rate, while those born between 1965 and 1978 accounted for the highest number of respondents.

Gender: The research investigated gender disparities, focusing on both male and female facility managers. The results, as shown, indicated that the majority of facility managers in this study were male.

Job Path: The study evaluated the methods of employment among facility managers in performing their duties. It focused on two groups: in-house facility managers, who are directly employed by the facility owner, and outsourced facility managers, who are hired by a contractor to provide services to the facility owner.

Table 8:Demographic distributions 2

DEMOGRAPHICS	% OF RESPONDENT
RETIREMENT	
Within the next year	**9%**
1-2 years	**7%**
3-5 years	**17%**
More than 5 years	**67%**
JOB FUNCTIONS	
Construction/ Project	**11%**
Consulting	**7%**
Facility Operations	**69%**
Real Estates	**5%**
Other	**8%**
INSTITUTION	
Banking	**10%**
City/County Government	**16%**
Educational	**23%**
Federal Government	**10%**
Health Care	**11%**
Professional Services	**30%**

Years until retirement: Facility managers in the United States were surveyed regarding their anticipated retirement timeline to address concerns about the upcoming retirement wave among professionals. This highlighted the need to document the critical skills that have contributed to their success. Respondents were asked to choose from the following timeframes: within the next year, 1-2 years, 3-5 years, and more than 5 years. Most facility managers indicated that they expect to retire in more than 5 years.

Job Functions: Facility managers specified their primary job function, highlighting the areas where they spend most of their time within Facility Management or related fields. The listed job

functions included Construction/Project Management, Consulting, Facility Operations, Real Estate, and other areas such as Procurement, Administration and Operations, and IT Operations.

Institution: Facility managers identified the industry that best represents their workplace. The industries included banking (consumer, commercial, savings, credit unions), city/county government (law enforcement, library, parks/public open space), educational (training center, K-12, college/university), federal government, health care, and professional services (legal, accounting, consulting, engineering, architecture). The demographic analysis revealed that most facility managers in the United States are employed in professional services. In contrast, fewer facility managers work in banking and the federal government.

Table 9:Demographic distributions 3

DEMOGRAPHICS	% OF RESPONDENT
CURRENTLY HAVE A MENTOR	
Yes, I do	**34%**
Maybe / not sure	**7%**
No, I don't	**59%**
SERVING AS MENTORS	
Yes, I do	**57%**
Maybe / not sure	**10%**
No, I don't	**33%**
SERVED AS A MENTOR	
Yes, I have	**86%**
Maybe / not sure	**6%**
No, I have not	**8%**
YEARS OF MANAGERIAL EXPERIENCE	
1-10 years	**22%**
11-20 years	**24%**
21-30 years	**29%**
More than 30 years	**25%**
REGIONS	

Northeast	**22%**
Southwest	**12%**
Southeastern	**20%**
West Coast	**13%**
Midwest	**33%**

Facility Managers currently have a mentor: A "mentor" is someone who provides aid, direction, or support to colleagues within an organization. Facility managers in the United States were surveyed about whether they currently have mentors from whom they frequently seek advice and support. The response options were: Yes, I do; No, I don't; and Maybe/Not sure. The majority of facility managers indicated that they do not have mentors at this time.

Facility Managers serving as mentors: The study investigated whether facility managers in the United States currently mentor others. Participants selected from the following options: Yes, I do; No, I don't; and Maybe/Not sure. The majority of respondents reported that they are currently serving as mentors.

Facility Managers served as mentors: To delve deeper into whether facility managers in the United States have ever served as mentors during their careers, professionals were asked to select from the following options for a detailed analysis: Yes, I have; Maybe/Not sure; and No, I have not. The majority of facility managers confirmed that they have served as mentors at some point in their professional careers.

Managerial/Technical and Years of managerial experience: The findings of this study revealed that all facility managers in the sample hold managerial roles (e.g., overseeing staff, budgets,

and/or projects) rather than technical roles (e.g., focusing on mechanical or systems aspects without managing people or budgets). Consequently, we aimed to understand the years of management experience among these professionals. The analysis categorized them based on their management experience into four levels: 1-10 years, 11-20 years, 21-30 years, and more than 30 years. The majority of professionals fall within the 21-30 years of management experience category.

Regions: The study focused on the United States and, for a detailed and comprehensive analysis, divided the country into five regions: Northwest, Southwest, Southeastern, West Coast, and Midwest. This regional division aided in the analysis and identification of personality traits. For the demographic analysis, a pictorial representation was created to display data from various states across the United States. Figure 7 below illustrates this representation, showing that the majority of our respondents are predominantly from California.

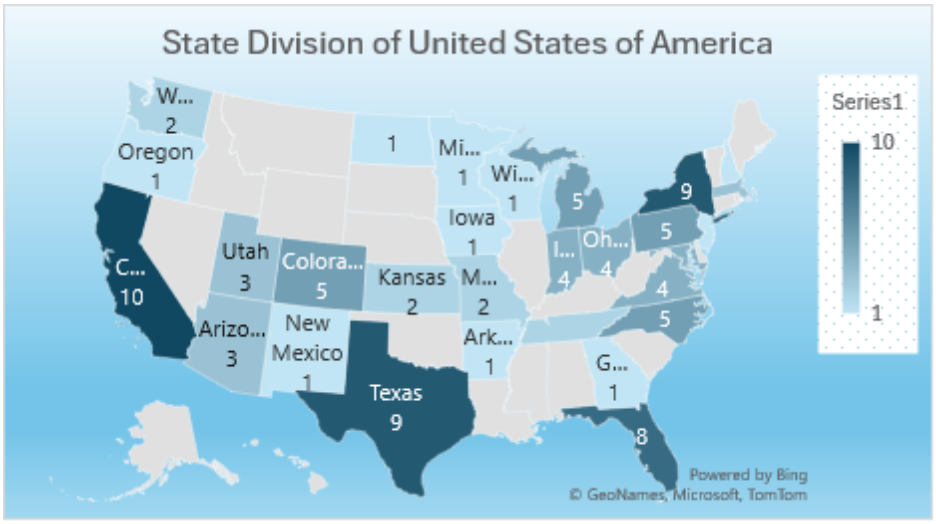

Figure 11:State Division of United States of America

5.2 STATISTICAL ANALYSIS USING IBM SPSS

Hypothesis 1: There are differences in specific personality traits when comparing the two levels in the United States.

The research employed an independent-sample t-test to analyze the overall differences in personality traits between entry-level and senior executive facility managers in the United States. Q-Q plots confirmed the data adhered to a normal distribution for both groups, and Levene's test for equality of variances confirmed that the assumption of variance homogeneity was satisfied. This validation allowed the independent t-test to be conducted with a 95% confidence interval (CI) for the mean difference.

Table 10 presents the percentage differences between entry-level and senior executive facility managers, with positive percentage differences indicating higher scores for entry-level managers and negative percentage differences indicating lower scores for entry-level managers. According to Table 10, entry-level facility managers scored higher in the following traits: fearfulness (16%), anxiety (9%), dependence (8%), sentimentality (3%), emotionality (9%), aesthetic appreciation (1%), people orientation (9%), and QDiSC (0.2%).

Conversely, the personality traits where entry-level managers scored lower include: sincerity (-0.9%), fairness (-4%), greed-avoidance (-2%), modesty (-2%), honesty/humility (-2%), social self-esteem (-5%), social boldness (-2%), sociability (-3%), liveliness (-10%), extraversion (-5%), forgiveness (-11%), gentleness (-1%), flexibility (-8%), patience (-1%), agreeableness (-7%), organization (-1%), diligence (-5%), perfectionism (-0.5%), prudence (-7%), conscientiousness (-3%), inquisitiveness (-6%), creativity (-2%), unconventionality (-0.3%),

openness to experience (-1.5%), self-management (-7%), social awareness (-6%), relationship management (-8%), reserved communications (-15%), and overall EQ (-4%).

Table 10 outlines the identified differences between entry-level and senior executive facility managers in the United States.

Table 10:Differences in personality traits (+entry levels & - senior executives)

HEXACO

Personality Traits	Percentage Differences
Sincerity	**-0.9%**
Fairness	**-4.%**
Greed-Avoidance	**-2%**
Modesty	**-2%**
Honesty/Humility	**-2%**
Fearfulness	**+16%**
Anxiety	**+9%**
Dependence	**+8%**
Sentimentality	**+3%**
Emotionality	**+9%**
Social self esteem	**-5%**
Social Boldness	**-2%**
Sociability	**-3%**
Liveliness	**-10%**
Extraversion	**-5%**
Forgiveness	**-11%**
Gentleness	**-1%**
Flexibility	**-8%**
Patience	**-1%**
Agreeableness	**-7%**
Organization	**-1%**

HEXACO	Diligence	**-5%**
	Perfectionism	**-0.5%**
	Prudence	**-7%**
	Conscientiousness	**-3%**
	Aesthetic Appreciation	**+1%**
	Inquisitiveness	**-6%**
	Creativity	**-2%**
	Unconventionality	**-0.3%**
	Openness to Experience	**-1.5%**
EI	Self-management	**-7%**
	Social Awareness	**-6%**
	Relationship Management	**-8%**
	Overall EQ	**-4%**
DiSC	People Orientation	**+9%**
	Reserved Communications	**-15%**
	Qdisc-101	**+0.2%**

Hypothesis 2: There are no significant differences in specific personality traits when comparing the two levels in the United States.

Additionally, an independent-sample t-test was used to also determine if there are significant differences in personality traits between entry-level and senior executive facility managers. Q-Q plots confirmed that the data followed a normal distribution for both groups, and Levene's test for equality of variances verified that the assumption of homogeneity of variances was met. This validation allowed for the independent t-test to be conducted on the data, with a 95% confidence interval (CI) for the mean difference.

Using IBM SPSS, differences between entry-level and senior executive facility managers in the United States were identified. To ascertain the significant differences between the two groups, a p-value ($p < 0.050$) was considered to identify statistically significant differences in human traits, highlighting the specific personality traits of each group. Table 13 below presents the significant differences, examining the mean differences between entry-level managers (n=34) and senior executives (n=69), encompassing a total sample of facility managers (n=103) for this study. As we proceed with the analysis, it is important to interpret the results as a continuum, where variations in characteristics do not inherently signify dominance or dependency.

Table 11:Significant percentage difference between Entry level and Senior Executive

Personality Trait	**Percentage Difference**
Fearfulness	+16%
Emotionality	+9%
Fairness	-4%
Diligence	-5%
Overall EQ	-5%
Agreeableness	-7%
Prudence	-7%
Relationship Management	-8%
Liveliness	-10%

From Table 11, it was essential to recognize that a positive mean difference indicated that entry-level facility managers scored higher than senior executive facility managers in certain personality traits. Conversely, a negative mean difference signified that entry-level facility

managers scored lower than their senior executive counterparts. Based on this framework, when comparing entry-level facility managers to senior executives, entry-level managers scored higher in traits such as Fearfulness (+16%) and Emotionality (+9%). However, they scored lower in traits such as Fairness (-4%), Liveliness (-10%), Agreeableness (-7%), Diligence (-5%), Prudence (-7%), Relationship Management (-8%), and Overall EQ (-5%). It was important to note that these percentages did not suggest superiority or inferiority. The detailed discussion section in the following chapter explained the results and their implications in depth.

Hypothesis 3: There are no significant differences in personality traits in related demographic factors.

To thoroughly identify the personality traits of facility managers, the study performed additional analysis on various demographics. A One-Way ANOVA was employed to determine if there were statistically significant differences in personality traits among facility managers based on different demographics such as age, mentorship, educational level, institution, job path, years until retirement, and years of managerial experience. In this analysis, the quantitative dependent variables were drawn from three assessment tools: the HEXACO personality inventory, Emotional Intelligence, and the DiSC behavioral instrument, while the independent variables included all the considered demographics. Levene's test for equality of variances confirmed that the assumption of homogeneity of variances was met. The One-Way ANOVA tested the null hypothesis, which posited no significant differences in personality traits across the various demographic groups. The findings of the One-Way ANOVA and post hoc analysis, which examined personality traits across various demographics, showed higher significant differences in two key assessment tools: the

HEXACO personality inventory and Emotional Intelligence. Whereas significant differences in QDiSC were only found in facility managers in different age groups. These findings will be presented below and discussed in detail in the following chapters. However, for demographics such as the expected retirement timeframe, no statistically significant differences were found among facility managers in the United States who anticipate retiring within the next year, 1-2 years, 3-5 years, or more than 5 years.

Age: The facility managers analyzed for personality traits were divided into age groups: those born between 1946-1964, 1965-1978, and 1979 or later. Although the majority of respondents fell into the 1965-1978 group, notable differences were found among the 1946-1964 age group, particularly in the HEXACO personality inventory. Table 14 highlights the significant differences identified across the different age groups.

Table 12:Significant average differences among FMs of various age groups

Personality Trait	Group Difference	Percentage Difference
People Orientation	1946-1964 to 1965-1978	82%
Anxiety	1979 or later to 1946-1964	29%
Anxiety	1979 or later to 1965-1978	27%
Extraversion	1946-1964 to 1979 or later	21%
QDiSC	1946-1964 to 1965-1978	18%
Forgiveness	1946-1964 to 1979 or later	18%
Inquisitiveness	1965-1978 to 1979 or later	15%
Emotionality	1979 or later to 1965-1978	15%
Social Self-Esteem	1946-1964 to 1965-1978	10%
Fairness	1946-1964 to 1965-1978	9%
Social Self-Esteem	1946-1964 to 1979 or later	3%

Inquisitiveness	1946-1964 to 1979 or later	1%

Job Function: The study examined different job functions and found statistically significant differences among facility managers in the United States. The job functions analyzed included Construction/Project Management, Consulting, Facility Operations, Real Estate, and other roles. These differences were specific to the HEXACO personality inventory. Table 13 displayed the statistically significant personality traits identified in this analysis.

Table 13:Significant average differences among FMs of various job functions

Personality Trait	**Group Difference**	**Percentage Difference**
Liveliness	Real Estate to Construction/Project Management	37%
Social Awareness	Real Estate to Consulting	31%
Liveliness	Facility Operations to Construction/ Project Management	22%

Institution: This study also aimed to identify facility managers in the United States across various sectors, including banking (consumer, commercial, savings, credit unions), city/county government (law enforcement, library, parks/public open space), educational (training centers, K-12, colleges/universities), federal government, healthcare, other institutions, and professional services (legal, accounting, consulting, engineering, architecture). The main differences were observed within the HEXACO personality inventory, indicating that facility managers across these sectors were similar in other personality traits. Table 14 highlighted the significant differences among some of these sectors.

Table 14:Significant average differences among FMs of various institutions

Personality Trait	Group Difference	Percentage Difference
Extraversion	Other Institution to Educational Institution	22%

Inhouse /outsourced: The objective was to analyze the personality traits of facility managers who were either directly employed by the facility owner (in-house) or by a third-party contractor (outsourced) providing services to the facility owner. This evaluation aimed to inform the facility management industry about the distinct personality traits of each group. Out of the three assessments conducted, one trait within the HEXACO assessment was found to distinguish between the two groups of facility managers. Table 15 outlined the differences between these groups.

Table 15:Significant average differences among Inhouse / Outsourced Facility Managers

Personality Trait	Group Difference	Percentage Difference
Perfectionism	In house to outsourced	8%

Educational Level: To investigate the personality traits of facility managers in the United States with varying educational backgrounds, the analysis focused on the following groups: associate's degree, bachelor's degree, graduate degree, high school diploma or equivalent, and no degree. Significant differences were identified in personality traits, emotional intelligence, and the HEXACO assessment. This finding suggested that facility managers were quite similar in DiSC behavioral traits. Table 16 highlighted the notable differences among facility managers with different educational backgrounds.

Table 16:Significant average differences among FMs of educational backgrounds

Personality Trait	Group Difference	Percentage Difference
Self-Management	Bachelor's degree to high school graduate	77%
Self-Management	No Degree to high school graduate	73%
Self-Management	Graduate degree to high school graduate	73%
Self-Management	Associate degree to High school graduate	72%
Inquisitiveness	Graduate degree to high school graduate	67%
Inquisitiveness	No Degree to high school graduate	66%
Inquisitiveness	Bachelor's degree to high school graduate	61%
Unconventionality	No Degree to high school graduate	42%
Openness to Experience	No Degree to high school graduate	39%
Diligence	Graduate degree to no degree	10%

Mentorship: This study examined three aspects of mentorship among facility managers: those who currently have mentors, those who currently serve as mentors, and those who have served as mentors at any point in their professional careers. Significant differences were identified in both the HEXACO and Emotional Intelligence assessments for facility managers in each of these groups. However, the DiSC behavioral assessment showed that facility managers were similar across all its domains and subdomains. Tables 17, 18, and 19 respectively present the

significant differences between facility managers who currently have mentors, those who have served as mentors in their professional careers, and those who are currently mentoring others.

Table 17:Significant average differences among FMs who currently have mentors.

Personality Trait	Group Difference	Percentage Difference
Social boldness	Maybe/ not sure - No I do not	21%
Creativity	Yes, I do - No I do not	14%
Liveliness	Yes, I do - No I do not	11%
Openness to Experience	Yes, I do - No I do not	10%
Organization	Yes, I do - No I do not	10%
Patience	Yes, I do - No I do not	10%
Extraversion	Yes, I do - No I do not	9%
Social self-esteem	Yes, I do - No I do not	9%
Diligence	Yes, I do - No I do not	7%
Conscientiousness	Yes, I do - No I do not	6%
Prudence	Yes, I do - No I do not	6%

Table 18:Significant average differences among FMs who have served as mentors

Personality Trait	Group Difference	Percentage Difference
Inquisitiveness	Yes, I have -No I have not	21%
Social Self-Esteem	Yes, I have -Maybe/ not sure	20%
Relationship Management	Yes, I have -No I have not	16%
Diligence	Yes, I have -No I have not	12%

Table 19:Significant average differences among FMs who currently serve as mentors

Personality Trait	Group Difference	Percentage Difference
Anxiety	Maybe/ Not sure - Yes, I do	23%
Self-Management	Yes, I do - No I do not	16%
Sociability	Yes, I do - No I do not	15%
Relationship Management	Yes, I do - No I do not	15%
Forgiveness	Yes, I do - No I do not	15%
Extraversion	Yes, I do - No I do not	14%
Liveliness	Yes, I do - No I do not	14%
Social Self-Esteem	Yes, I do - No I do not	13%
Social Awareness	Yes, I do - No I do not	13%
Social Boldness	Yes, I do - No I do not	12%
Overall EQ	Yes, I do - No I do not	10%
Agreeableness	Yes, I do - No I do not	8%
Conscientiousness	Yes, I do - No I do not	6%
Diligence	Yes, I do - No I do not	6%

5.3 CONCLUSION OF THE ANALYSIS

The study aimed to test three hypotheses, and the responses to these questions are as follows:

Hypothesis 1	
Null Hypothesis (H_0)	There are no differences in personality traits between the two levels in the United States -Reject

Alternate Hypothesis (H_1)	There are differences in personality traits between the two levels in the United States - Accept
Hypothesis 2	
Null Hypothesis (H_0)	There are no **significant** differences in specific personality traits when comparing the two levels in the United States -Reject
Alternate Hypothesis (H_1)	There are significant differences in specific personality traits when comparing the two levels in the United States - Accept
Hypothesis 3	
Null Hypothesis (H_0)	There are no significant differences in personality traits in related demographic factors -Reject
Alternate Hypothesis (H_1)	There are significant differences in personality traits in related demographic factors - Accept

CHAPTER 6: DISCUSSIONS

6.1 PERSONALITY TRAITS BETWEEN ENTRY LEVEL AND SENIOR EXECUTIVES

This section examined the statistically significant differences in traits between entry-level and senior executive facility managers, evaluated at the 95% confidence level. It is divided into two parts: one indicating areas where entry-level professionals scored higher than senior executives and another indicating where they scored lower. The main distinctions found in this analysis were related to the HEXACO personality inventory and Emotional Intelligence assessments. Although some differences were noted between the two groups in the DiSC behavioral assessment, they were not significant enough to warrant detailed examination. This part aims to convey the findings presented in Table 11 in a clear and relatable manner for readers.

6.1.1 HIGHER SCORES OF ENTRY LEVEL COMPARED TO SENIOR EXECUTIVES

Two personality traits have been identified where entry-level professionals exhibit higher scores compared to senior executives. The following sections provide a detailed discussion of these traits.

Fearfulness: On average, entry-level facility managers in the United States displayed (*16%)* higher levels of *fearfulness* compared to senior executives. This suggests that entry-level facility managers were more focused on avoiding risks that might hinder their ability to achieve project goals. Additionally, they tended to have a stronger tendency to avoid physical harm.

Take-Away: For entry-level professionals, elevated fear scores implied that as newcomers to facility management, they frequently aimed for perfection. This indicated that they had high expectations for the tasks assigned by their supervisors and a strong desire to meet established standards. Their focus was particularly on ensuring everything was done correctly, reflecting their commitment to meeting the expectations placed upon them (Cherry, 2023). This tendency stemmed from their limited job experience, leading to a persistent concern about losing their position over minor mistakes. However, maintaining a certain level of fear was particularly important in the facility management industry, as it helped keep them safe from harm and prevented them from making extreme decisions without fully understanding the potentially severe consequences.

Emotionality: Entry-level facility managers in the United States scored *(9%)* higher in *emotionality* compared to senior executives. These professionals often needed emotional support from their supervisors and peers. Consequently, they tended to feel empathy and formed sentimental connections with their coworkers.

Take-Away : Entry level facility managers according to (Ashton & Lee, 2009), often display various attributes, such as anxiety, fearfulness about life and their job duties. These individuals frequently have intensified emotional reactions to situations, with their behavior shaped by their experiences. However, this quality makes them adept at resolving conflicts and excellent communicators, both of which are vital in the profession. Consequently, they foster a more positive work environment, strengthen relationships with coworkers, and attain greater success in recruitment, retention, and engagement, aiding in career advancement.

6.1.2 LOWER SCORES OF ENTRY LEVEL COMPARED TO SENIOR EXECUTIVES

When comparing entry-level facility managers to senior executives, entry-level managers received lower scores, showing that senior executives scored higher on specific personality traits. Detailed personality traits are outlined below.

Liveliness: Entry-level professionals, on average, scored *(-10%)* lower in *liveliness* compared to senior executives. This indicated that entry-level professionals generally did not feel as cheerful or energetic. In contrast, senior executives tended to be more optimistic and spirited.

Take-Away: A high level of liveliness indicated that senior executives were "full of life," making them active, enthusiastic, and outgoing. They were typically seen as serious professionals, known for being deep thinkers and analytical, which contributed to their energetic and motivated demeanor. This trait was crucial for senior executives due to their roles, which involved interacting with many employees and supervisors. Their enthusiasm and outgoing nature greatly benefited their networking and leadership abilities. According to Velev (2018) a lively demeanor was contagious, and when leaders openly showed their concern for employees' work, it motivated the team to adopt the same attitude. This, in turn, encouraged the team to complete their tasks with greater attention and care.

Agreeableness: Entry-level professionals generally exhibited *(-7%)* lower levels of *agreeableness* compared to senior executives. In contrast, senior executives, who scored higher in agreeableness, tended to be more forgiving of past wrongs and more lenient in their judgments of others.

Take-Away: Senior executives who scored higher in agreeableness demonstrated an essential trait that emphasized their ability to get along well with colleagues and the employees they supervised. They also showed a strong commitment to maintaining social harmony (Gordon, n.d.). These professionals were generally friendly, accessible, and diplomatic in their interactions with both colleagues and employees they managed. For senior executives, possessing high agreeableness scores proved essential because it was crucial for building positive relationships and adapting to unforeseen changes, as facility management often encountered unexpected situations. This trait made them pleasant and highly accepting of various circumstances, indicating their proficiency in managing people, including skilled employees and vendors involved in their projects.

Prudence: Senior executive facility managers typically displayed higher levels of *prudence*, approximately *(-7%)* more than entry-level professionals. This increased prudence indicated that they carefully considered their options and demonstrated significant caution and self-control. When making decisions for the projects they managed, they approached each choice with thorough care and deliberation.

Take-Away: Senior executives exhibiting high levels of prudence diligently worked to resolve unique challenges in their roles. They thoroughly identified underlying issues, utilizing their extensive expertise and intuition to determine the most effective solutions (Farmer, 2021). This suggests that these professionals never acted impulsively, which was crucial when overseeing numerous employees and managing high-value projects. Senior executive facility managers also assessed different outcomes and solutions proposed by their team before making important decisions.

Consequently, this ability enabled them to make well-informed judgments about required actions and uphold strong values such as courage and justice.

Relationship Management and Over-all EQ: When comparing senior executives to entry-level facility managers in terms of emotional intelligence, senior executives exhibited higher scores in *relationship management (-8%)* and *overall emotional intelligence (EQ) (-5%)*. Senior executives excelled at using their emotional awareness and understanding of others' emotions to navigate interactions successfully. The analysis revealed that senior executives possessed superior overall emotional intelligence in managing emotions compared to entry-level facility managers.

Take-Away: Senior executives with higher overall EQ scores demonstrated proficiency in recognizing the emotions of the professionals they interacted with daily. They utilized this emotional awareness to remain adaptable and effectively influence employee behavior. Additionally, they accurately identified and comprehended the emotions of their colleagues and employees in everyday tasks or projects. This proficiency enabled senior executives to foster a supportive work environment that encouraged consistent progress. Furthermore, their strong relationship management skills allowed them to excel in negotiating contracts while maintaining valuable relationships with vendors. They communicated clearly and managed conflicts efficiently, further enhancing their ability to create a positive and productive work environment.

Diligence: Entry-level professionals scored *(-5%)* lower in *diligence* compared to senior executives. This indicated that senior executives exhibited higher levels of diligence, reflecting their strong work ethic and commitment to achieving their objectives. They did not shy away from difficult or challenging tasks, demonstrating a persistent approach in carrying out their duties.

Take-Away: According to Spann et al. (2020)**,** senior executives demonstrated their diligence by actively engaging in challenging projects and tasks, even while managing numerous other responsibilities. They personally undertook complex assignments rather than delegating them, consistently dedicating their full effort. This quality was crucial for senior executives, as they frequently faced difficult projects requiring perseverance and effort to keep the team and organization focused on their goals. Their diligence ensured that tasks and projects were approached with urgency and accuracy, enabling timely and budget-compliant completion. This ability to handle difficult tasks while maintaining attention to detail and punctuality highlighted their strong work ethic and commitment to achieving their goals.

Fairness: Entry-level facility managers typically scored *(-4%)* lower in *fairness* compared to senior executives. Senior executives, who scored higher in fairness, demonstrated a strong commitment to integrity by not exploiting others or society for personal gain. They adhered to rules and refrained from manipulating them for their own benefit.

Take-Away: Senior executives with high levels of fairness demonstrated impartial judgment, especially in their interactions with employees and supervisors. They aimed

to meet the needs of all parties and deliver outcomes beneficial for everyone involved. This ability was crucial for senior executives due to their leadership roles, as unfair treatment could lead to a loss of mutual respect and decreased employee motivation. Additionally, their fairness ensured ethical dealings with external vendors and contractors, helping to prevent corruption and fraud that could harm the company's reputation and the parties involved.

6.2 PERSONALITY TRAITS BETWEEN OTHER DEMOGRAPHICS

To address the third hypothesis of this study, the researchers investigated notable differences in personality traits across various demographics. For clarity and ease of understanding, the two significant personality traits for each demographic group would be analyzed.

6.2.1 JOB FUNCTION

The job functions examined encompass construction/project management, consulting, facility operations, real estate, and other roles such as procurement, administration, and IT operations. The analysis highlighted significant differences in specific job functions, as depicted in Table 13. However, we concentrated on discussing the two most prominent personality traits identified below to ensure a clearer understanding.

Social Awareness: The analysis revealed that facility managers primarily engaged in real estate scored significantly higher in *social awareness (31%)* compared to those in consulting. Real estate facility managers can accurately perceive their colleagues'

emotions in real-time and comprehend their behavioral tendencies across different situations.

Take-Away: Facility managers in real estate recognized the diverse cultural backgrounds, societal norms, and ethical principles that influenced people's behaviors. This understanding enabled them to empathize with their colleagues. This trait was particularly strong in real estate facility managers due to their frequent interactions with various stakeholders, including tenants, property owners, and contractors.

Liveliness: Facility managers primarily engaged in facility operations were generally about *(22%) livelier* than those in construction/project management. Those involved in facility operations typically exhibited higher levels of cheerfulness and optimism.

Take-Away: The emphasis on people in facility operations made liveliness a crucial personality trait for facility managers, enabling them to be dynamic, enthusiastic, and sociable when working with vendors and contractors. This trait was more prevalent among facility operations managers than those in construction/project management due to their work environment. Facility operations were typically more stable and did not have the rigid deadlines and extended project timelines often encountered in construction and project management.

6.2.2 INSTITUTION

The institutions of facility managers assessed in this study include banking (consumer, commercial, savings, credit unions), city/county government (law enforcement, library,

parks/public open space), educational (training centers, K-12, college/university), federal government, healthcare, professional services (legal, accounting, consulting, engineering, architecture), and other organizations (sites and museums, IT, technology, etc.). The analysis revealed significant differences across specific institutions, as shown in Table 14. For better clarity, we will focus on discussing the most notable personality trait identified below.

Extraversion: Facility managers in various institutions, such as technology and IT, generally exhibited higher levels of *extraversion (22%)* compared to those in educational settings. Consequently, facility managers in these sectors tended to have a positive self-image and confidence when leading or speaking to groups of people.

Take-Away: Facility managers in the technology and IT sectors generally exhibited more extraversion and sociability than those in educational settings due to the cultural frameworks of their workplaces. These tech and IT environments fostered collaboration, interaction, and openness, which helped develop and enhance sociable traits. Conversely, educational institutions, being more structured, did not emphasize or cultivate high levels of outgoing behavior and confidence.

6.2.3 EDUCATIONAL LEVELS

Reviewing the personality traits outlined in Table 16 across different educational levels revealed significant differences among facility managers with various educational backgrounds. However, for this discussion, we concentrated on two notable differences between specific groups. A detailed analysis is presented below.

Inquisitiveness: Facility managers holding graduate degrees generally demonstrated higher *inquisitiveness* scores *(67%)* compared to those with only high school diplomas.

This indicates that facility managers with advanced degrees tended to seek information more actively and exhibited greater curiosity about a variety of topics.

Take-Away: The heightened inquisitiveness among facility managers with graduate degrees indicated a strong drive to explore their field of work, areas of interest, and even unrelated subjects. This trait was more prominent in facility managers with advanced degrees due to their extensive exposure to diverse knowledge, covering various disciplines, theories, and methodologies. This broad exposure fostered a greater enthusiasm for learning and seeking knowledge. Additionally, their participation in professional development activities such as conferences and workshops further enhanced their inquisitive nature.

Self-Management: Facility managers with bachelor's degrees generally exhibited higher *self-management* scores *(77%)* compared to high school graduates. This indicated that these professionals were better at using their emotional awareness to remain adaptable and guide their behavior in a constructive manner.

Take-Away: Bachelor's degree holders in facilities management typically excelled at setting goals, managing time, and organizing. They were also adept at self-reflection and emotional regulation. Their education, which emphasized personal accountability, goal setting, and self-discipline, thoroughly prepared them for careers they were passionate about. Additionally, their academic programs emphasized emotional intelligence, equipping them with the skills needed to effectively manage their emotions and behaviors.

6.2.4 AGE

Significant variations in personality traits between the age groups of facility managers are evident from the results displayed in Table 12.

Anxiety: Facility managers born in 1979 or later reported feeling more *anxious* than those born between 1965 and 1978, with a difference of *(27%).* This suggested that younger professionals were more likely to be concerned by relatively modest difficulties.

Take-Away: As facility managers born in 1979 or later advanced in their careers, younger facility managers often worried about the future and potential changes in their lives. Their relatively limited work experience contributed to their uncertainty and heightened self-awareness, leading to increased anxiety. Additionally, younger generations tended to struggle more with maintaining a healthy work-life balance while juggling personal life, career advancement, and societal expectations, which further amplified their anxiety.

Forgiveness: When compared to facility managers born in 1979 or later, those born between 1946 and 1964 typically show higher levels of *forgiveness (18%).* Their greater capacity for forgiving translates into a greater willingness to put their trust in people and mend amicable relationships even in the wake of unfavorable treatment.

Take-Away: Facility managers born between 1946 and 1964 often made a conscious effort to let go of grudges to build resilience and learn from their mistakes. This exceptional capacity for forgiveness was influenced by several factors. First, individuals in this age group experienced a greater number of personal and professional

life events, which enabled them to cultivate a more understanding and tolerant perspective that valued peacemaking. Moreover, the work cultures of earlier generations placed a premium on loyalty and long-term employment, necessitating the development of forgiving skills to maintain productive working relationships.

6.2.5 CURRENTLY HAVE A MENTOR

Table 17 identified the major personality qualities of facility managers who currently have a mentor. These are the topics covered below.

Patience: Facility managers who currently have mentors exhibited *(10%)* more *patience* compared to those without mentors. These professionals were less likely to feel or express anger and were better equipped to handle frustration.

Take-Away: Facility managers with mentors created outstanding teams because they could persevere through the challenges and setbacks accompanying each assignment. Guided and supported by mentors, they handled stress and obstacles more skillfully, which increased their patience. Mentors acted as role models, exhibiting composed behavior that mentees emulated. Additionally, mentees learned significantly from their mentors' experiences, helping them anticipate problems and control their impulses.

Creativity: Overall, facility managers with mentors exhibited *(14%)* more *creativity* than those without mentors. They often applied their ingenuity to routine tasks and sought novel solutions to challenges.

Take-Away: Facility managers with mentors enhanced their ability to generate and implement new ideas. By utilizing available resources, they identified problems and developed various solutions that benefited their teams. Moreover, the diverse experiences and networks provided by mentors helped mentees cultivate an innovative and inspired mindset. Additionally, mentors created a supportive environment that encouraged experimentation without fear of failure, nurturing the mentees' creativity.

6.2.6 SERVED AS A MENTOR

The following section highlighted the significant character attributes of facility managers who had served as mentors, as presented in Table 18.

Diligence: Facility managers who have served as mentors often exhibit *(12%)* greater *diligence* than those who have not. They frequently had a strong dedication to their task.

Take-Away: The genuine, reliable, and passionate nature of facility managers who served as mentors reflected their dedication to their work and their determination to fulfill any responsibilities they undertook. Having mentored others, they acted as role models for other professionals, motivating them to maintain high standards and exhibit exemplary work ethics. These professionals also showed a strong commitment to ongoing development and the progress of their mentees, consistently striving to make a significant and lasting impact on those they mentored.

Relationship Management: When comparing facility managers who have never been mentors to those who have, *relationship management* abilities of the former group were

generally higher *(16%).* This involved managing encounters skillfully by using both their own emotional awareness and understanding of others' feelings.

Take-Away: Facility managers who have served as mentors demonstrated exceptional relationship management skills by providing continuous guidance and feedback to their mentees. Their ability to understand the emotions and perspectives of their mentees enhanced their empathy. Additionally, they developed the skill of active listening, which enabled them to grasp the needs and concerns of their mentees, fostering open communication and trust both crucial for effective relationship management.

6.2.7 SERVING AS A MENTOR

Table 19 highlights the key personality traits of facility managers currently serving as mentors. These traits are outlined below.

Social Boldness: Compared to facility managers who are not mentoring, those currently serving as mentors exhibited *(12%)* more *social bravery*. These individuals were more likely to interact with others and speak confidently in public.

Take-Away: The welcoming and bold personalities of facility managers who serve as mentors allowed them to foster and support social connections. This trait made mentors particularly effective, as their leadership roles required them to speak up and take initiative, which was crucial for guiding and motivating their mentees. Their frequent public speaking engagements also enhanced their ability to communicate effectively in both formal and informal settings. Compared to professionals who were not acting as mentors, this approach made them feel more at ease and confident.

Conscientiousness: Facility managers who were currently involved in mentoring demonstrated *(6%)* higher levels of *conscientiousness* compared to those who did not mentor. They had a greater tendency to maintain tidy physical surroundings, manage their time effectively, and approach tasks methodically.

Take-Away: Experts who advised others exhibited exceptional self-control and self-discipline in achieving their objectives. Their involvement in mentorship programs inspired them to set and accomplish goals in an organized manner. Moreover, they had a duty to continuously demonstrate positive behaviors as role models, motivating them to uphold high standards of organization, effective time management, and a strong focus on goal achievement. Because they managed their own work responsibilities alongside their mentoring roles, they were more accountable. Additionally, handling dual responsibilities necessitated greater discipline and organization in managing every task.

CHAPTER 7: CONCLUSIONS & FUTURE RESEARCH

7.1 CONCLUSIONS

As the facilities management sector continued to grow and evolve, the number of entry-level and senior executive professionals was expected to increase. The findings of this study were crucial, as they offered valuable guidance for recruitment practices and career development plans, especially for new facility managers and other professionals in the field. By thoroughly examining the main personality trait differences between entry-level and senior executive facility managers, this study provided insights into how these qualities varied among different demographic groups within the industry. These insights were utilized to develop professional development initiatives, mentorship programs, and training courses. By emphasizing these differences, the study ensured that facility managers were equipped with the necessary tools to effectively fulfill their roles, ultimately contributing to the overall success and growth of the industry.

The results demonstrated that entry-level workers typically exhibited greater degrees of emotionality and fear. This reflected their relative inexperience and the difficulties they had navigating the early phases of their careers. It also showed a greater need for support and a more cautious approach when handling new duties. These characteristics indicated that entry-level managers were more likely to experience anxiety and required assurance and guidance to become more competent and confident in their roles.

Conversely, characteristics such as agreeableness, prudence, relationship management, total emotional intelligence, diligence, and fairness were substantially more prevalent among

senior executives. These qualities highlighted their wealth of experience and their ability to manage challenging situations with ease. Their vibrancy conveyed an upbeat and enthusiastic attitude that inspired their teams. A higher degree of agreeableness implied a greater tendency to be cooperative and forgiving, which promoted better teamwork and conflict resolution. The exceptional relationship management skills of senior executives demonstrated their ability to establish and nurture professional relationships. They were also known for their cautious and thoughtful decision-making.

Additionally, their high level of emotional intelligence allowed them to better understand and control both their own and others' emotions, enhancing communication and leadership. Senior executives who exhibited diligence demonstrated a strong work ethic and a commitment to achieving their objectives, while those who were fair ensured that their decisions were unbiased, upheld ethical standards, and fostered an equitable work environment.

For other demographics, facility managers in real estate exhibited a higher level of social awareness, while those in facility operations demonstrated a greater degree of liveliness. These differences underscored how various professions within the field had distinct contexts and demands. Similarly, facility managers in IT and technology fields were more extroverted than those in educational institutions, likely due to the team-oriented and collaborative nature of their workplaces. Another significant factor was educational background: facility managers with graduate degrees tended to be more curious, and those with bachelor's degrees were more adept at self-management. These qualities were essential for both successful personal and professional organization and ongoing learning.

Age-related differences revealed that older facility managers exhibited greater resilience and forgiveness, while younger managers tended to be more anxious. The study also highlighted

the impact of mentoring on personality traits. Facility managers with mentors showed more tolerance and creativity, while those who served as mentors demonstrated greater dedication and interpersonal skills. Current mentors displayed heightened social bravery and diligence, emphasizing the importance of these roles in developing leadership qualities and strong interpersonal competencies.

In conclusion, as the facility management sector continues to grow, the findings of this study will be crucial in guiding current and future facility managers, advancing their career paths, and supporting the industry's overall development.

7.2 FUTURE RESEARCH

Future studies ought to focus more on how personality traits change throughout the course of a facility manager's career. Identifying over time studies that may shed light on how these characteristics change as people gain experience and take on more responsibility. Our knowledge of how to develop desirable attributes in facility managers may also be expanded by investigating the effects of various corporate cultures and leadership philosophies on personality traits.

A more thorough understanding of the worldwide facility management profession may also be possible by broadening the research to involve a wider range of sectors and geographical areas. This would make it easier to distinguish between characteristics that are more context-specific and universal.

The study's overall conclusions highlight the significance of comprehending and cultivating personality traits to improve facility managers' performance and effectiveness in a variety of jobs.

REFERENCES

Adams, T. (2018). *Health Care Facility Management Competencies*. American Society for Healthcare Engineering.

Affandi, H. M., Hassan, F., Ismail, Z., Kamal, M. F. M., & Aziz, A. A. (2015). Roles and Tasks for Malaysian Entry Level Construction Managers. In R. Hashim & A. B. Abdul Majeed (Eds.), *Proceedings of the Colloquium on Administrative Science and Technology* (pp. 335–347). Springer. https://doi.org/10.1007/978-981-4585-45-3_33

Agung, A. A. G., & Yuniar, I. (2016). Personality assessment website using DISC: A case study in information technology school. *2016 International Conference on Information Management and Technology (ICIMTech)*, 72–77. https://ieeexplore.ieee.org/abstract/document/7930305/

Ameer, A., Naz, F., Taj, B. G., & Ameer, I. (2022). The impact of manager's personality traits on project success through affective professional commitment: The moderating role of organizational project management maturity system. *Journal of Facilities Management*, *20*(2), 284–305. https://doi.org/10.1108/JFM-02-2021-0020

Andersen, E. S., Birchall, D., Jessen, S. A., & Money, A. H. (2006). Exploring project success. *Baltic Journal of Management*, *1*(2), 127–147.

Ashton, M. C., & Lee, K. (2009). The HEXACO–60: A Short Measure of the Major Dimensions of Personality. *Journal of Personality Assessment*, *91*(4), 340–345. https://doi.org/10.1080/00223890902935878

Atalah, A. (2014). Comparison of Personality Traits among Estimators, Project Managers, and the Population. *Journal of Management in Engineering*, *30*(2), 173–179. https://doi.org/10.1061/(ASCE)ME.1943-5479.0000209

Atkin, B., & Brooks, A. (2021). *Total Facility Management*. John Wiley & Sons.

Becker, F., & Steele, F. (1990). The total workplace. *Facilities*, *8*(3), 9–14. https://doi.org/10.1108/EUM0000000002099

Belassi, W., & Tukel, O. I. (1996). A new framework for determining critical success/failure factors in projects. *International Journal of Project Management*, *14*(3), 141–151.

Bennett, J. F., Davidson, M. J., & Galeand, A. W. (1999). Women in construction: A comparative investigation into the expectations and experiences of female and male construction undergraduates and employees. *Women in Management Review*, *14*(7), 273–292.

Bennett, R. J., & Robinson, S. L. (2000). Development of a measure of workplace deviance. *Journal of Applied Psychology*, *85*(3), 349.

Borzumato-Gainey, C. (2017). Personality Types Based on The Myers–Briggs Type Indicator. *College Student Development: Applying Theory to Practice on the Diverse Campus, 83*. https://books.google.com/books?hl=en&lr=&id=zpbvDQAAQBAJ&oi=fnd&pg=PA83&dq=What+is+the+Myers-Briggs+Types+Indicator&ots=QPL3JF4T4A&sig=xe6pF9fdDDFjyZxi3CVrxHIg-5w

Bradberry, T., & Greaves, J. (2009). *Emotional Intelligence 2.0*. Talent Smart. https://books.google.com/books?hl=en&lr=&id=JAP8B7R67K0C&oi=fnd&pg=PA1&dq=The+Emotional+Intelligence+Appraisal%E2%84%A2+-+Technical+Manual.+TalentSmart+Inc&ots=uiag8G4RqZ&sig=25OHFRlCOJYmL-6OUmSfOgwDzz4

Buck, L. L., & Barrick, R. K. (1987). They're Trained, But Are They Employable? *Vocational Education Journal*, *62*(5), 29–31.

Buecker, S., Maes, M., Denissen, J. J. A., & Luhmann, M. (2020). Loneliness and the Big Five Personality Traits: A Meta–Analysis. *European Journal of Personality*, *34*(1), 8–28. https://doi.org/10.1002/per.2229

Call, S. (2022). United States Facility Management Industry Demographic Trends and Contemporary Workforce Challenges. *Journal of Facility Management Education and Research*, *6*(1), 15–21. https://doi.org/10.22361/jfmer/151121

Carr, P. G. (2000). *An investigation of the relationship between personality traits and performance for engineering and architectural professionals providing design services to the building sector of the construction industry*.

Cheah, E. L. (2020). *Top-Performing Project Managers in Electrical Contractors: An Assessment of Human Dimensions and Project Performance* [M.S., University of Kansas]. https://www.proquest.com/docview/2444666141/abstract/6D7E66DA23454041PQ/1

Ashton, M. C., & Lee, K. (2009). The HEXACO–60: A Short Measure of the Major Dimensions of Personality. *Journal of Personality Assessment*, *91*(4), 340–345. https://doi.org/10.1080/00223890902935878

Call, S. (2022). United States Facility Management Industry Demographic Trends and Contemporary Workforce Challenges. *Journal of Facility Management Education and Research*, *6*(1), 15–21. https://doi.org/10.22361/jfmer/151121

Cherry, K. (2023). *How to Deal with the Fear of Failure*. Verywell Mind. https://www.verywellmind.com/what-is-the-fear-of-failure-5176202

Farmer, Y. (2021). Prudence, Ethics and Anticipation in Visionary Leaders. *Journal of Values-Based Leadership*, *15*(1). https://doi.org/10.22543/0733.151.1367

Gordon, S. (n.d.). *Agreeableness as a Personality Trait*. Verywell Mind. Retrieved June 24, 2024, from https://www.verywellmind.com/how-agreeableness-affects-your-behavior-4843762

Spann, C. A., Yu, A., Galla, B. M., Duckworth, A. L., & D'Mello, S. K. (2020). Is academic diligence domain-specific or domain-general? An investigation of the math, verbal, and spatial academic diligence tasks with middle schoolers. *Learning and Individual Differences, 80,* 101870. https://doi.org/10.1016/j.lindif.2020.101870

Velev, B. (2018, May 15). Why enthusiasm is a key factor for your success? *The Success Space*. https://thesuccess.space/why-enthusiasm-is-key-factor-for-your-success/

Chen, M.-C., Cheng, S.-J., & Hwang, Y. (2005). An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual Capital*, *6*(2), 159–176.

Cheng, M., Dainty, A. R. J., & Moore, D. R. (2005). What makes a good project manager? *Human Resource Management Journal*, *15*(1), 25–37. https://doi.org/10.1111/j.1748-8583.2005.tb00138.x

Chiang, Y.-H., Hsu, C.-C., & Shih, H.-A. (2015). Experienced high performance work system, extroversion personality, and creativity performance. *Asia Pacific Journal of Management*, *32*(2), 531–549. https://doi.org/10.1007/s10490-014-9403-y

Childs, B. R., Weidman, J. E., Farnsworth, C. B., & Christofferson, J. P. (2017). Use of Personality Profile Assessments in the U.S. Commercial Construction Industry. *International Journal of Construction Education and Research*, *13*(4), 267–283. https://doi.org/10.1080/15578771.2016.1246493

Chotipanich, S. (2004). Positioning facility management. *Facilities*, *22*(13/14), 364–372. https://doi.org/10.1108/02632770410563086

Costa Jr, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences*, *13*(6), 653–665.

Cotts, D. G., Roper, K. O., & Payant, R. P. (2010). *The Facility Management Handbook* (3rd ed.). American Management Association.

Covey, S. R. (2020). *The 7 habits of highly effective people*. Simon & Schuster. https://books.google.com/books?hl=en&lr=&id=3K7eDwAAQBAJ&oi=fnd&pg=PA1&dq=The+seven+habits+paradigm&ots=5C5Long6Fh&sig=eWzk0OcjvQKOHkDUgrkFwvqOfws

Creasy, T., & Anantatmula, V. S. (2013). From Every Direction—How Personality Traits and Dimensions of Project Managers Can Conceptually Affect Project Success. *Project Management Journal*, *44*(6), 36–51. https://doi.org/10.1002/pmj.21372

Delaney, J. T., & Huselid, M. A. (1996). THE IMPACT OF HUMAN RESOURCE MANAGEMENT PRACTICES ON PERCEPTIONS OF ORGANIZATIONAL PERFORMANCE. *Academy of Management Journal*, *39*(4), 949–969. https://doi.org/10.2307/256718

Deviney, D., Mills, L., & Gerlich, R. N. (2009). Predictors of success for gifted and talented schools: An attitude, interest, values and behavioral approach. *American Society of Business and Behavioral Sciences 16th Annual Meeting (Conference). Las Vegas, NV*, 19–22. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=31cbb0c052bbf4c59b63c33804bbd96625343fd9

Durodola, O. D., Ayedun, C. A., & Onipede, I. S. (2012). Assessment of the Traits of Facilities Management Key Drivers in South-Western Nigerian Hotels. *Journal of Management and Sustainability*, *2*(2), 163–177.

Dvir, D., Raz, T., & Shenhar, A. J. (2003). An empirical analysis of the relationship between project planning and project success. *International Journal of Project Management*, *21*(2), 89–95. https://doi.org/10.1016/S0263-7863(02)00012-1

Edum-Fotwe, F. T., & McCaffer, R. (2000). Developing project management competency: Perspectives from the construction industry. *International Journal of Project Management*, *18*(2), 111–124.

Emmer, M. J., & Brunhoeffer, G. C. F. (2015). Knowledge and attributes of forecasting index: Self-assessment for graduating Construction Management students. *Proceedings of the 2015 Associated Schools of Construction Annual International Conference*. http://ascpro0.ascweb.org/archives/cd/2015/paper/CERT385002015.pdf

Estates, N. H. S. (1996). Re-engineering the facilities management service. *Health Facilities Note*, *16*.
Farooqui, T., & Farooqui, A. A. (2009). Aging: An important factor for the pathogenesis of neurodegenerative diseases. *Mechanisms of Ageing and Development*, *130*(4), 203–215.

Farmer, Y. (2021). Prudence, Ethics and Anticipation in Visionary Leaders. *Journal of Values-Based Leadership*, *15*(1). https://doi.org/10.22543/0733.151.1367
Gordon, S. (n.d.). *Agreeableness as a Personality Trait*. Verywell Mind. Retrieved June 24, 2024, from https://www.verywellmind.com/how-agreeableness-affects-your-behavior-4843762

Gao, Y., González, V. A., & Yiu, T. W. (2020). Exploring the Relationship between Construction Workers' Personality Traits and Safety Behavior. *Journal of Construction Engineering and Management*, *146*(3), 04019111. https://doi.org/10.1061/(ASCE)CO.1943-7862.0001763

Gatewood, R., Feild, H. S., & Barrick, M. (2015). *Human resource selection*. Cengage Learning.
Gehring, D. R. (2007). Applying Traits Theory of Leadership to Project Management. *Project Management Journal*, *38*(1), 44–54. https://doi.org/10.1177/875697280703800105

Gehring, W. J., Liu, Y., Orr, J. M., & Carp, J. (2012). The error-related negativity (ERN/Ne). *Oxford Handbook of Event-Related Potential Components*, 231–291.

Gunderson, D. E., & Gloeckner, G. W. (2011). Superintendent Competencies and Attributes Required for Success: A National Study Comparing Construction Professionals' Opinions. *International Journal of Construction Education and Research*, *7*(4), 294–311. https://doi.org/10.1080/15578771.2011.618964

Henderson, L. S. (2008). The Impact of Project Managers' Communication Competencies: Validation and Extension of a Research Model for Virtuality, Satisfaction, and Productivity on Project Teams. *Project Management Journal*, *39*(2), 48–59. https://doi.org/10.1002/pmj.20044

Hinks, J., Reuvid, J., & Hinks, J. (2002). Measuring the value of facilities and facilities management. *Managing Business Support Services*, 177–187.

John, O. P., & Srivastava, S. (1999). *The Big-Five trait taxonomy: History, measurement, and theoretical perspectives*. http://www.personality-project.org/revelle/syllabi/classreadings/john.pdf

Johnson, M. K., Rowatt, W. C., & Petrini, L. (2011). A new trait on the market: Honesty–Humility as a unique predictor of job performance ratings. *Personality and Individual Differences*, *50*(6), 857–862.

Jones, C. S., & Hartley, N. T. (2013). Comparing correlations between four-quadrant and five-factor personality assessments. *American Journal of Business Education*, *6*(4), 459–470.

Lane, G., & Robinson, A. (1995). The development of standards of competence for senior management. *Executive Development*, *8*(6), 4–8.
Lee, K., & Ashton, M. C. (2018). Psychometric Properties of the HEXACO-100. *Assessment*, *25*(5), 543–556. https://doi.org/10.1177/1073191116659134

Livadas, S. (2014). Employers gain insights from personality-assessment tests. *Rochester Business Journal*, *30*(13), 19.

Luţaş, M., Nistor, R., Radu, M., & Beleiu, I. (2020). Perceptions regarding the profile of an ideal project manager. *Amfiteatru Economic*, *22*(54), 608–622.

Lykourentzou, I., Antoniou, A., Naudet, Y., & Dow, S. P. (2016). Personality Matters: Balancing for Personality Types Leads to Better Outcomes for Crowd Teams. *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing*, 260–273. https://doi.org/10.1145/2818048.2819979

Maali, O., Lines, B., Shalwani, A., Smithwick, J., & Sullivan, K. (2022). Differences between Job Roles in the Specialty Trades: A Human Factors Approach. *EPiC Series in Built Environment*, *3*, 139–147. https://doi.org/10.29007/qxnx

McCrae, R. R., & Costa, P. T. (1989). Reinterpreting the Myers-Briggs Type Indicator from the Perspective of the Five-Factor Model of Personality. *Journal of Personality*, *57*(1), 17–40. https://doi.org/10.1111/j.1467-6494.1989.tb00759.x

McCrae, R. R., Terracciano, A., Costa, P. T., & Ozer, D. J. (2006). Person-factors in the California Adult Q-Set: Closing the door on personality trait types? *European Journal of Personality*, *20*(1), 29–44. https://doi.org/10.1002/per.553

Miller, A. (1991). Personality Types, Learning Styles and Educational Goals. *Educational Psychology*, *11*(3–4), 217–238. https://doi.org/10.1080/0144341910110302

Moore, M. A., & Vucetic, J. F. (2014). Identifying effective IT project manager personality characteristics. *2014 Annual Global Online Conference on Information and Computer Technology*, 96–100. https://ieeexplore.ieee.org/abstract/document/7113672/

Müller, R., & Turner, R. (2006). *Choosing appropriate project managers: Matching their leadership style to the type of project*. https://books.google.com/books?hl=en&lr=&id=U-KuDgAAQBAJ&oi=fnd&pg=PT7&dq=Turner+and+M%C3%BCller+(2006)&ots=N5SdOm2jk4&sig=oV6kzh-_i9BYiGmqn_UBqN0lIH4

Müller, R., & Turner, R. (2010). Leadership competency profiles of successful project managers. *International Journal of Project Management*, *28*(5), 437–448.

Nebel, E. C., & Ghei, A. (1993). A Conceptual Framework of the Hotel General Manager's Job. *Hospitality Research Journal*, *16*(3), 27–38. https://doi.org/10.1177/109634809301600304

Nourse, H. O. (1990). Managerial real estate: Corporate real estate asset management. *(No Title)*. https://cir.nii.ac.jp/crid/1130000795391289088

Nutt, B. (2000). Four competing futures for facility management. *Facilities*, *18*(3/4), 124–132. https://doi.org/10.1108/02632770010315670

Odusami, K. T. (2002). Perceptions of Construction Professionals Concerning Important Skills of Effective Project Leaders. *Journal of Management in Engineering*, *18*(2), 61–67. https://doi.org/10.1061/(ASCE)0742-597X(2002)18:2(61)
Oedekoven, D., & Hay, J. (2010). Relationship awareness: How managers can improve employee performance. *Rangelands*, *32*(4), 13–16.

Ogundare, T. I., Kassa, R., Maali, O., Lines, B., Smithwick, J., & Sullivan, K. T. (2023a). Differences in the Human Dimensions of Specialty Field Leaders and General Contractor Project Managers. *2023 ASEE Annual Conference & Exposition*. https://peer.asee.org/differences-in-the-human-dimensions-of-specialty-field-leaders-and-general-contractor-project-managers

Ogundare, T. I., Kassa, R., Maali, O., Lines, B., Smithwick, J., & Sullivan, K. T. (2023b, June 25). *Differences in the Human Dimensions of Specialty Field Leaders and General Contractor*

Project Managers. 2023 ASEE Annual Conference & Exposition. https://peer.asee.org/differences-in-the-human-dimensions-of-specialty-field-leaders-and-general-contractor-project-managers

Pathuri, R. T., Killingsworth, J., & Mehany, M. S. H. M. (2022). Knowledge, Skills, and Abilities for Senior-Level Construction Managers: A U.S. Industry-Based Delphi Study. *International Journal of Construction Education and Research*, *18*(3), 234–250. https://doi.org/10.1080/15578771.2020.1861136

Payne, T. (2000). *Facilities Management: A Strategy for Success*. Chartridge Books Oxford.
Peterson, R. S., Smith, D. B., Martorana, P. V., & Owens, P. D. (2003). The impact of chief executive officer personality on top management team dynamics: One mechanism by which leadership affects organizational performance. *Journal of Applied Psychology*, *88*(5), 795.

Posner, M. I. (1992). Attention as a Cognitive and Neural System. *Current Directions in Psychological Science*, *1*(1), 11–14. https://doi.org/10.1111/1467-8721.ep10767759

Price, I. (2004). Business critical FM. *Facilities*, *22*(13/14), 353–358. https://doi.org/10.1108/02632770410563068

Price, L. A. (2015). Disc instrument validation study. *People Keys: Boardman, OH, USA*. https://www.discvision.nl/wp-content/uploads/2017/02/IML_DISC_Validation_Study_201514616.pdf

Rondeau, E. P., Brown, R. K., & Lapides, P. D. (2012). *Facility Management*. John Wiley & Sons.

Roper, K., & Payant, R. (2014). *The Facility Management Handbook*. AMACOM.

Sherer, M., & Eadie, R. (1987). Employability skills: Key to success. *Thrust*, *17*(2), 16–17.

Shiem-Shin, T. D. (1999). An integrated resource management view of facilities management. *Facilities*, *17*(12/13), 462–469. https://doi.org/10.1108/02632779910293451

Silzer, R. F., & Dowell, B. (2010). Strategy-driven talent management: A leadership imperative. *Language*, *45*(881p), 26cm.

Singh, A. (2002). Behavioral perceptions of design and construction engineers. *Engineering, Construction and Architectural Management*, *9*(2), 66–80.

Skulmoski, G. J., & Hartman, F. T. (2010). Information Systems Project Manager Soft Competencies: A Project-Phase Investigation. *Project Management Journal*, *41*(1), 61–80. https://doi.org/10.1002/pmj.20146

Slowikowski, M. K. (2005). Using the DISC Behavioral Instrument to Guide Leadership and Communication. *AORN Journal*, *82*(5), 835–843. https://doi.org/10.1016/S0001-2092(06)60276-7

Sohn, S. I., Kim, D. H., Lee, M. Y., & Cho, Y. W. (2012). The reliability and validity of the Korean version of the Pittsburgh Sleep Quality Index. *Sleep and Breathing*, *16*(3), 803–812. https://doi.org/10.1007/s11325-011-0579-9

Songer, A. D., Walker, B., & Beliveau, Y. (2004). Central contractor emotional intelligence in the construction industry. *Proceedings of the 20th Annual Conference of the Association of Researchers in Construction Management*, *1*, 488–493. https://www.arcom.ac.uk/-docs/proceedings/ar2004-0487-0493_Songer_and_Walker.pdf

Spann, C. A., Yu, A., Galla, B. M., Duckworth, A. L., & D'Mello, S. K. (2020). Is academic diligence domain-specific or domain-general? An investigation of the math, verbal, and spatial academic diligence tasks with middle schoolers. *Learning and Individual Differences*, *80*, 101870. https://doi.org/10.1016/j.lindif.2020.101870

Sullivan, K., Georgoulis, S., & Lines, B. (2010). Empirical study of the current United States facilities management profession. *Journal of Facilities Management*, *8*, 91–103. https://doi.org/10.1108/14725961011041143

Sullivan, K., Kashiwagi, J., & Kashiwagi, D. (2010). The optimizing of design delivery services for facility owners. *Journal of Facilities Management*, *8*(1), 26-26–46.

Sunindijo, R. Y., & Hadikusumo, B. H. W. (2014). Emotional Intelligence for Managing Conflicts in the Sociocultural Norms of the Thai Construction Industry. *Journal of Management in Engineering*, *30*(6), 04014025. https://doi.org/10.1061/(ASCE)ME.1943-5479.0000211

Tay, L., & Ooi, J. T. L. (2001). Facilities management: A "Jack of all trades"? *Facilities*, *19*(10), 357–363. https://doi.org/10.1108/EUM0000000005534

Thal, A. E., & Bedingfield, J. D. (2010). Successful project managers: An exploratory study into the impact of personality. *Technology Analysis & Strategic Management*, *22*(2), 243–259. https://doi.org/10.1080/09537320903498587

Turner, J. R. (2009). *The handbook of project-based management*. The McGraw-Hill Companies, Inc. http://lms.aambc.edu.et:8080/xmlui/bitstream/handle/123456789/141/The%20Handbook%20of%20Project-Based%20Management%20by%20j%20Rodney%20Turner.pdf?sequence=1

Velev, B. (2018, May 15). Why enthusiasm is key factor for your success? *The Success Space*. https://thesuccess.space/why-enthusiasm-is-key-factor-for-your-success/

Virginia Polytechnic Institute and State University. https://search.proquest.com/openview/a78e2618f779a1515ba751be8914429e/1?pq-origsite=gscholar&cbl=18750&diss=y

Waheed, Z., & Fernie, S. (2009). Knowledge based facilities management. *Facilities*, *27*(7/8), 258–266. https://doi.org/10.1108/02632770910956111

Wang, C. M., Xu, B. B., Zhang, S. J., & Chen, Y. Q. (2016). Influence of personality and risk propensity on risk perception of Chinese construction project managers. *International Journal of Project Management*, *34*(7), 1294–1304.

Wichard, J., & Kees, N. L. (2006). *The manager as facilitator*. Bloomsbury Publishing USA. https://books.google.com/books?hl=en&lr=&id=abXOEAAAQBAJ&oi=fnd&pg=PR5&dq=The+Manager+as+Facilitator.+Greenwood+Publishing+Group&ots=n_Je-o5Xay&sig=pmFqCgzLdUkUofTMJU2ZvIevEVA

Wright, P. M., Kacmar, K. M., McMahan, G. C., & Deleeuw, K. (1995). P= f (MXA): Cognitive ability as a moderator of the relationship between personality and job performance. *Journal of Management*, *21*(6), 1129–1139.

Žiaran, P. (2015). Humility and self-esteem as key predictors of ethical attitude in leadership. *Procedia Economics and Finance*, *34*, 689–696.

APPENDIX 1: DEMOGRAPHIC SURVEY

Human Dimension for Facility Managers

Informed Consent

Q1
The purpose of this survey is to identify the personality traits of facility professionals. This is the FIRST study of its kind, so your help is greatly needed. We are first seeking volunteers to participate in the study. **Everyone who participates will receive their OWN, customized personality profile**, including specific insights and perspectives.

There are two parts to the study. This initial survey is to identify volunteers for participation and collect some basic background information. It will take **less than two minutes** to finish!

In about 2-3 weeks, you will then be sent a link to complete the full personality profile.

All responses will be kept confidential and only reported in aggregate form. Information about data security and compliance can be found at qualtrics.com/platform/security/. We will be seeking volunteers until **October 31, 2023**.

If you want to opt out of this survey, please select "I do not agree" below.

Should you have any questions, please contact:

Nickalos Rocha, MPA
Director, Benchmarking
Nickalos.Rocha@ifma.org
+1.281.974.5665

Q2 With full knowledge of all foregoing, I agree, of my own free will, to participate in this survey.

- I agree - continue with the survey (1)
- I do NOT agree - end the survey & opt-out (2)

Employment Details

Q3
Ok, let's get started! Please tell us about your current position and role.
What is your name and email address?

- Name (1) _____
- Email (2) _____

Q4 Which of the following best describes your **primary job function** (where you spend the majority of your time) within Facility Management or related field?

- Facility Operations (1)
- Construction/Project Management (2)
- Consulting (3)
- Education (4)
- Engineering (5)
- Environmental Health and Safety (6)
- Architecture (7)
- Information Technology (8)
- Interior Design/Space Planning (9)
- Janitorial (10)
- Real Estate (11)
- Sales (12)
- Other (13) _____

Q5 Which of the following industries best describes the **INSTITUTION** that you represent?

- Banking (Consumer, Commercial, Savings, Credit Unions) (1)
- Health Care (2)
- Hospitality (Hotel, Restaurants, Hospitality-Related) (3)
- Information Services (Data Processing, Information Services, E-Commerce) (4)
- Insurance (Health, Life, Auto, Mutual, Casualty, Flood) (5)
- Investment Services (Securities and Investment Services) (6)
- Media (Broadcasting, Entertainment, Gaming, Media, Publishing) (7)
- Professional Services (Legal, Accounting, Consulting, Engineering, Architecture) (8)
- Telecommunications (Telecommunication, Internet Services/Products) (9)
- Trade (Wholesale, Retail) (10)
- Transportation (Transportation, Freight) (11)
- Utilities (Water, Gas, Electric, Energy Management) (12)
- Aircraft/Industrial (industrial Equipment, Aerospace) (14)
- Building/Construction (Building, Construction Materials) (15)
- Chemical/Pharmaceutical (Chemical, Pharmaceutical, Biotech) (16)
- Consumer Products (Food, Paper, or related) (17)
- Computer (Computer hardware or software) (18)
- Electronics (Electronics, Telecommunications Equipment) (19)
- Energy (Energy related, mining, or distribution) (20)
- Motor Vehicles (21)
- Association (Association, Federation, Non-Profit Foundation, Society) (13)
- Charitable Foundation (22)
- Corrections (private, state, federal, city, county) (23)
- Cultural Facilities (Private, Institutions, Government) (24)
- Educational (Training Center, K-12, College / University) (25)
- Federal Government (26)

- State/Provincial Government (27)
- City/County Government (Law Enforcement, Library, Parks / Public Open Space) (28)
- Special Districts/ Quasi-government (Transportation Authorities, School Boards) (29)
- Military (30)
- Religious (31)
- Research (32)
- **Other Institution:** (33) _____

Q6 Do you consider your <u>current</u> job on the managerial or technical path?

- Managerial (e.g. supervising people, budgets, and/or projects) (1)
- Technical (e.g. mechanical or systems focus - do not manage people of budgets) (2)
- Other (3) _____

Q7 Are you employed directly by the facility owner (in-house) or a third-party contractor (outsourced) that provides services to the facility owner?

- In-house - I am employed directly by the facility owner (1)
- Outsourced - I am employed by a contractor to provide services to the facility owner (2)
- Not applicable - I don't provide facility services as part of my job function (3)
- I don't know (4)

Q8 Which of the following **best describes <u>your</u> current position level** within your organization?

- Level 1 - Professional specialist (manage no employees) (1)
- Level 2 - Manage employees but do not manage supervisors (2)
- Level 3 - Manage supervisor who manage others (3)
- Level 4 - Manage two or more levels of supervisors (4)
- Level 5 - Senior executive (5)
- Not applicable (6)

Q9 How many total years of management experience do you have that are directly related to working in Facility Operations / the built environment?

- 1-2 years (1)
- 3-5 years (2)
- 6-10 years (3)
- 11-15 years (4)
- 16-20 years (5)
- 21-25 years (6)
- 26-30 years (7)
- More than 30 years (8)

Q10 About how many years until you retire?

- Within the next year (1)
- 1-2 years (2)
- 3-5 years (5)

- More than 5 years (6)

Personal Details

Q11
This is the last page! Can you tell us about yourself?
When were you born?

- Prior to 1946 (1)
- 1946 - 1964 (2)
- 1965 - 1978 (3)
- 1979 - 1997 (4)
- 1998 or later (5)
- I prefer not to answer (6)

Q17 How do you describe yourself?

- Male (1)
- Female (2)
- Non-binary / third gender (3)
- Prefer to self-describe (4) _____
- Prefer not to say (5)

Q13 What is the highest level of education you have attained?

- Less than high school diploma or equivalent (1)
- High school graduate or equivalent (2)
- Some college, no degree (3)
- Vocational certificate, no degree (4)
- Associate's degree (5)
- Bachelor's degree (6)
- Master's degree (7)
- Doctorate degree (8)
- Other (9)
- I prefer not to answer (10)

Q14 Which of the following professional designations and credentials, if any, do you hold? (Select all that apply)

- AIA (1)
- ARM (IREM) (2)
- AssocRICS (RICS) (3)
- CEM (AEE) (4)
- CEFM (APPA) (5)
- CFM (IFMA) (6)
- CHFM (ASHE) (7)
- CIWFM (8)
- CPM (IREM) (9)
- CPMM (AFE) (10)
- FIWFM (11)

- FMA (BOMI) (12)
- FMP (IFMA) (13)
- LEAN/Six Sigma (14)
- LEED AP or GA (USGBC) (15)
- MCR (CoreNet) (16)
- WIWFM (17)
- MRICS (RICS) (18)
- PE (19)
- PMP (PMI) (20)
- RPA (BOMI) (21)
- SHRM (22)
- SFP (IFMA) (23)
- Other (24)

Q15 In which continent do you currently reside?

- Africa (1)
- Asia (2)
- Australia (3)
- Europe (4)
- North America (5)
- South America (6)

Q16 In which state / province do you primarily work?
▼ Alabama (1) ... Other Country not listed above (67)

Q19 In which country do you reside?
_____

APPENDIX 2: HEXACO PERSONALITY INVENTORY SCALE DESCRIPTIONS

EXHIBIT A : MAJOR HEXACO DOMAINS

Domain-Level Scales	Domain-Level Description
Honesty/ Humility	Persons with very high scores on the Honesty-Humility scale avoid manipulating others for personal gain, feel little temptation to break rules, are uninterested in lavish wealth and luxuries, and feel no special entitlement to elevated social status. Conversely, persons with very low scores on this scale will flatter others to get what they want, are inclined to break rules for personal profit, are motivated by material gain, and feel a strong sense of self-importance.
Emotionality	Persons with very high scores on the Emotionality scale experience fear of physical dangers, experience anxiety in response to life's stresses, feel a need for emotional support from others, and feel empathy and sentimental attachments with others. Conversely, persons with very low scores on this scale are not deterred by the prospect of physical harm, feel little worry even in stressful situations, have little need to share their concerns with others, and feel emotionally detached from others.
Extraversion	Persons with very high scores on the Extraversion scale feel positively about themselves, feel confident when leading or addressing groups of people, enjoy social gatherings and interactions, and experience positive feelings of enthusiasm and energy. Conversely, persons with very low scores on this scale consider themselves unpopular, feel awkward when they are the center of social attention, are indifferent to social activities, and feel less lively and optimistic than others do.
Agreeableness	Persons with very high scores on the Agreeableness scale forgive the wrongs that they suffered, are lenient in judging others, are willing to compromise and cooperate with others, and can easily control their temper. Conversely, persons with very low scores on this scale hold grudges against those who have harmed them, are rather critical of others' shortcomings, are stubborn in defending their point of view, and feel anger readily in response to mistreatment.
Conscientiousness	Persons with very high scores on the Conscientiousness scale organize their time and their physical surroundings, work in a disciplined way toward their goals, strive for accuracy and perfection in their tasks, and deliberate carefully when making decisions. Conversely, persons with very low scores on this scale tend to be unconcerned with orderly surroundings or schedules, avoid difficult tasks or challenging goals, are satisfied with work that contains some errors, and make decisions on impulse or with little reflection.
Openness to Experience	Persons with very high scores on the Openness to Experience scale become absorbed in the beauty of art and nature, are inquisitive about various domains of knowledge, use their imagination freely in everyday life, and take an interest in unusual ideas or people. Conversely, persons with very low scores on this scale are rather unimpressed by most works of art, feel little intellectual curiosity, avoid creative pursuits, and feel little attraction toward ideas that may seem radical or unconventional.

EXHIBIT B : SUB HEXACO DOMAINS

Domain	Facet	Assessment
Honesty/Humility	*Sincerity*	Tendency to be genuine in interpersonal relations
	Fairness	Tendency to avoid fraud and corruption
	Greed avoidance	Tendency to be uninterested in possessing lavish wealth, luxury goods, and signs of high social status
	Modesty	Tendency to be modest and unassuming
Emotionality	*Fearfulness*	Tendency to experience fear
	Anxiety	Tendency to worry in a variety of contexts
	Dependence	One's need for emotional support from others
	Sentimentality	Tendency to feel strong emotional bonds with others
Extraversion	*Social Self-Esteem*	Tendency to have positive self-regard, particularly in social contexts
	Social Boldness	One's comfort or confidence within a variety of social situations
	Sociability	Tendency to enjoy conversation, social interaction, and parties
	Liveliness	One's typical enthusiasm and energy
Agreeableness	*Forgiveness*	One's willingness to feel trust and liking toward those who may have caused one harm
	Gentleness	Tendency to be mild and lenient in dealings with other people
	Flexibility	Assesses one's willingness to compromise and cooperate with others
	Patience	Tendency to remain calm rather than to become angry
Conscientiousness	*Organization*	Tendency to seek order, particularly in one's physical surroundings
	Diligence	Tendency to work hard
	Perfectionism	Tendency to be thorough and concerned with details
	Prudence	Tendency to deliberate carefully and to inhibit impulses
Openness to Experience	*Aesthetic Appreciation*	One's enjoyment of beauty in art and nature
	Inquisitiveness	Tendency to seek information about, and experience with, the natural and human world
	Creativity	One's preference for innovation and experiment
	Unconventionality	Tendency to accept the unusual

APPENDIX 3: EMOTIONAL INTELLIGENCE SCALE DESCRIPTIONS

Definition of Emotional Intelligence Scales

Core EI Skills	Domain-Level Description
Self-Awareness (SEA)	Ability to accurately perceive your emotions in the moment and understand your tendencies across situations.
Self-Management (SM)	Ability to use awareness of your emotions to stay flexible and direct your behavior positively.
Social-Awareness (SOA)	Ability to accurately pick up on emotions in other people and understand what is really going on with them.
Relationship Management (RA)	Ability to use awareness of your own emotions and those of others to manage interactions successfully.

Interpreting Emotional Intelligence Scores

Range	Interpretation
90-100	A strength to capitalize on
80-89	A strength to build on
70-79	With some improvement, this could be a strength
60-69	Something to work towards
59 or below	A goal to address

APPENDIX 4: QDISC-101 SCALE DESCRIPTIONS

The tool assigns a person to one of the four quadrants—Dominant, Inspiring, Supportive, and Cautious—based on their score for work orientation (task-oriented vs. people-oriented) and communication style (reserved vs. forceful). Every individual will exhibit all four behaviors to varying degrees, ranging from minimal to maximal.

Dominant (D)	Associated with control, power, and assertiveness. Actions are focused on accomplishing results. Individuals with high D scores are perceived as demanding, determined, and pioneering.
Inspiring (I)	Associated with social interaction skills and communication. Actions are focused on building relationships and persuading others. Individuals with high I score are perceived as convincing, magnetic, and optimistic.
Supporting (S)	Associated with patience, resilience, and thoughtfulness. Actions are focused on compliance and cooperation. Individuals with high S scores are perceived as calm, stable, and unemotional.
Cautious (C)	Associated with structure and organization. Individuals with high C scores are perceived as cautious, precise, and tactful.

APPENDIX 5: DESCRIPTIVE STATISTICS DEFINITIONS

1. **N Statistic**:
    - The total number of individuals that participated in the survey or observations.
2. **Range Statistic**:
    - It measures the variance between the minimum and maximum values of a variable.
3. **Minimum Statistic**:
    - The lowest value observed in the data for each variable.
4. **Maximum Statistic**:
    - The highest value observed in the data for each variable.
5. **Mean Statistic**:
    - The average value per variable. It provides a central tendency assessment of the data.
6. **Std. Deviation Statistic**:
    - The standard deviation calculates the amount of variation or dispersion of the data points from the mean.
7. **Variance Statistic**:
    - The square of the standard deviation provides a further measure of variability in the data.
8. **Skewness Statistic**:
    - A measure of the asymmetry of the data distribution. Positive or right skewness means the distribution is longer on the right, and negative or left skewness means the distribution is longer on the left.

9. **Kurtosis Statistic**:
    - It defines the "tailedness" of the distribution vis-à-vis to its shape. Positive kurtosis describes a distribution with heavier tails, and negative kurtosis describes a lighter tail compared to a normal distribution.

APPENDIX 6: HEXACO INVENTORY SCORING

The Scoring Keys for the 60-Item Version

Honesty-Humility	
Sincerity	6, 30R, 54
Fairness	12R, 36, 60R
Greed-Avoidance	18, 42R
Modesty	24R, 48R
Emotionality	
Fearfulness	5, 29, 53R
Anxiety	11, 35R
Dependence	17, 41R
Sentimentality	23, 47, 59R
Extraversion	
Social Self-Esteem	4, 28R, 52R
Social Boldness	10R, 34, 58
Sociability	16, 40
Liveliness	22, 46R
Agreeableness	

Forgiveness	3, 27
Gentleness	9R, 33, 51
Flexibility	15R, 39, 57R
Patience	21R, 45
Conscientiousness	
Organization	2, 26R
Diligence	8, 32R
Perfectionism	14R, 38, 50
Prudence	20R, 44R, 56R
Openness to Experience	
Aesthetic Appreciation	1R, 25
Inquisitiveness	7, 31R
Creativity	13, 37, 49R
Unconventionality	19R, 43, 55R