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The Level of Research Competency among Fourth-Year Bachelor of Science in Hospitality Management (BSHM) Students at the University in Cebu City

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ABSTRACT: Research competency is a multidimensional construct essential for transitioning students to professional readiness. This study evaluated the research competency levels of ninety-five (95) fourth-year Bachelor of Science in Hospitality Management (BSHM) students at the University in Cebu City. Employing a descriptive-correlational research design, the study utilized a structured survey questionnaire. Statistical treatment included frequency and percentage distribution, weighted mean, and Pearson r correlation coefficient. The majority were young adults aged 18 to 24, who graduated from Senior High Schools within Cebu City, with Research 2 final grades ranging between 1.60 and 2.00. Students prioritized attention to detail in data collection and analysis and mastering the formulation of specific research questions. Most students entered college having completed Practical Research 2 with a solid grasp of research ethics. Fourth-year BSHM students demonstrated a highly competent level across all research domains. No significant relationships were found between competency levels and age, SHS location, Research 2 final grades, or previous SHS research training. A critical exception emerged in Resilience and Problem-Solving, yielding a significant relationship with practical research skills. These results conclude that students developed a high-level, functional research capacity independent of demographic backgrounds or previous academic grades. It is recommended that the university adopt the proposed supplemental research guide.

Keywords*:* Cebu City, Experiential learning, hospitality management, research competency, self-efficacy, senior high school research training, Philippines

I. INTRODUCTION

Research competencies represent a multidimensional construct essential for transitioning students from passive learning to cognitive independence and professional readiness (Böttcher & Thiel, 2018). These competencies encompass an integrated set of knowledge, skills, and attitudes required to successfully undertake scientific investigations. According to Böttcher and Thiel (2018), this involves a sophisticated interplay of cognitive abilities, such as critical thinking and problem-solving, alongside functional skills like data management and statistical analysis. At its core, being research-competent enables an individual to navigate the entire lifecycle of a project, ranging from the initial identification of a knowledge gap and the formulation of research questions to the rigorous application of methodology and the ethical communication of results (Westera, 2001). Beyond technical proficiency, information literacy, the ability to locate, evaluate, and effectively use information within specific academic contexts, plays a vital role in transforming raw data into meaningful insights while preserving scientific integrity.

The progression from student to professional practitioner is fundamentally rooted in the acquisition of research competencies, which facilitate a shift away from rote memorization toward the autonomous generation of knowledge (Gómez-Hurtado et al., 2021). This intellectual evolution is essential for cultivating a scientific mindset where empirical evidence and critical questioning supersede intuition (Murtonen & Salmento, 2019). In an era characterized by information density and continuous cognitive overload, information literacy enables students to discern high-quality evidence from surrounding noise, directly correlating with professional problem-solving efficacy (Head et al., 2022; Sánchez & Rodríguez, 2023). Ultimately, these research-based capabilities significantly enhance student employability, project management capabilities, and long-term professional adaptability, fostering critical soft skills like perseverance and ethical judgment required for volatile real-world challenges (Willison & O'Regan, 2007).

The global demand for research-ready graduates is systematically codified across diverse international educational policies. India's National Education Policy (NEP) 2020 mandates research and internship integration to foster critical thinking (Ministry of Education, 2020), while Indonesia's National Standard of Higher Education (SNPT) requires a research-based final project for graduation (Cambridge Handbook, 2022). Within the European Higher Education Area, the Bologna Process embeds research methods to enhance graduate employability (European Union, 2020). Locally, the Philippine educational landscape reflects similar imperatives. The Commission on Higher Education (2017), through CMO No. 62, emphasizes undergraduate research integration, which is preceded by the Department of Education's K-12 mandate requiring subjects like Practical Research 1 and 2 and Inquiry, Investigation, and Immersion (DepEd, 2016).

Despite these vigorous structural mandates, a significant global and local gap persists between academic requirements and functional mastery. International higher education systems frequently prioritize theoretical content over practical scientific literacy, creating a learning-doing gap where students struggle to bridge classroom inquiry with workforce demands (Murtonen & Balloo, 2019; Healy et al., 2020). In the Philippines, early exposure to research in Senior High School can inadvertently cultivate procedural compliance over genuine inquiry. Treated as high-stakes terminal requirements, students often view research as a mechanical checkbox exercise focused on technicalities like APA formatting and plagiarism scores, carrying over a surface-level approach into tertiary education (Salazar & Santos, 2022).

Given the data-driven nature of the modern workforce, investigating how foundational research skills translate into specialized professional outcomes is critical. This study assesses the research competency levels of ninety-five (95) fourth-year Bachelor of Science in Hospitality Management (BSHM) students at the University in Cebu City. Anchored in Constructivist Learning Theory, Experiential Learning Theory, and Self-Efficacy Theory, the investigation evaluates student expectations, foundational backgrounds, and actual competence. Specifically, it analyzes the relationships between respondents' demographic and academic profiles, including age, Senior High School location, Research 2 grades, expected learning, and previous SHS research training, and their actual performance across three primary domains: practical skills; problem-solving, thinking, and communication skills; and personal attitudes and professional ethics, with the end view of devising a proposed supplemental research guide designed to enhance the research proficiency of BSHM students.

II. LITERATURE REVIEW

This study is anchored in the theory of Constructivist Learning Theory (1978) by Jean Piaget and Lev Vygotsky. This theory serves as the backbone of research-based education, suggesting that learners do not passively absorb information but rather actively construct knowledge based on their experiences. Knowledge is not viewed as a commodity to be transferred from teacher to student, but as an active, evolutionary process of internal construction. Piaget's cognitive constructivism emphasizes how individuals integrate new research experiences into existing mental frameworks, or schemas, through the dual processes of assimilation and accommodation (Amineh & Asl, 2015). Within the context of this study, this suggests that a student's competency is developed as they reconcile theoretical classroom lessons with the practical, hands-on challenges of scientific investigation.

Furthermore, social constructivist theory highlights the importance of the Zone of Proximal Development (ZPD) and the role of "scaffolding" in developing research proficiency. Vygotsky's ZPD provides a critical framework for understanding how students bridge the gap between their current abilities and the level of expertise required for independent investigation. Specifically, it represents the distance between what a student can investigate independently and what they can achieve under the guidance of a mentor or through collaboration with more capable peers (Reid & Petocz, 2011).

Central to navigating the ZPD is the role of scaffolding, wherein educators provide temporary, adjustable support structures to help students master complex research tasks. This support may include guided literature reviews, mentored data analysis, or the modeling of ethical decision-making. Effective scaffolding is characterized by its "fading" nature; as the student internalizes research methodologies and develops self-regulation, external support is gradually removed (Pea, 2004). This process is essential for fostering cognitive independence, ensuring that students do not merely follow instructions but learn to justify their own methodological choices (Holton & Clarke, 2006). Conversely, without intentional scaffolding, the "learning-doing gap" is exacerbated, as students often find the leap from theoretical classroom concepts to high-stakes scientific inquiry too vast to navigate alone (Wass et al., 2011).

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methodological choices (Holton & Clarke, 2006). Conversely, without intentional scaffolding, the "learning-doing gap" is exacerbated, as students often find the leap from theoretical classroom concepts to high-stakes scientific inquiry too vast to navigate alone (Wass et al., 2011).

Experiential Learning Theory (1984) by David Kolb focuses on the "learning-by-doing" cycle: Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. The theory proposed that learning is a cycle involving four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. ELT emphasizes that for a person to gain true competency, they must be able to transform a lived experience into a functional skill. The theory also suggests that research competency is only fully realized when students can apply scientific methods to solve real-world problems within the hospitality industry (Kolb and Kolb, 2017; Morris, 2020; Yardy et al., 2012).

The structural foundation of ELT is built upon the tension between two primary dimensions of learning: Prehension (how we grasp experience) and Transformation (how we process it). According to the theory, knowledge results from the combination of grasping and transforming experience through a dialectic relationship between opposing modes of adaptation to the world. One dimension represents the conflict between Concrete Experience and Abstract Conceptualization, while the other represents the conflict between Reflective Observation and Active Experimentation. This theoretical structure suggests that learning is not a linear accumulation of facts but a sophisticated process of resolving these dualities to create new knowledge through a cycle of experiencing, reflecting, thinking, and acting (Passarelli & Kolb, 2012).

Furthermore, the theory emphasizes that learning is a continuous process grounded in experience, where "all learning is relearning." This suggests that a learner's current ideas are not just influenced by new information but are actively modified and integrated through a recursive cycle. In this view, the development of a person's cognitive abilities is an evolutionary process where the individual must move through the four distinct stages of the cycle to achieve deep comprehension. Failure to complete any stage of the cycle results in a "learning void," where information remains fragmented rather than becoming part of a cohesive mental structure. This process is further explained by the biological "learning organ," where the brain's structure physically changes as it moves through the stages of sensing, reflecting, and acting (Zull, 2002; Kayes, 2002).

Self-Efficacy Theory, as developed by Bandura (1997), focuses on an individual's belief in their capacity to execute the behaviors necessary to produce specific performance attainments. The theory identified "mastery experiences" as the most influential source of self-efficacy. The theory posits that self-efficacy is a person's belief in their ability to succeed in specific situations. Furthermore, Bandura argues that this belief determines how people approach tasks, how much effort they apply, and how long they persist when facing challenges (Zimmerman, 2000; Artino, 2012).

Modern interpretations of the theory emphasize that self-efficacy is not a static trait but a dynamic cognitive process. According to Schunk and DiBenedetto (2020), self-efficacy acts as a self-regulatory mechanism that influences how individuals set goals and monitor their own progress. This perspective suggests that a high sense of efficacy enhances an individual's "cognitive flexibility," allowing them to adapt their strategies when initial attempts at a task fail. By focusing on the internal perception of capability, the theory provides a framework for understanding why individuals with similar objective skills may achieve vastly different levels of performance.

In addition to mastery experiences, the theory identifies vicarious experiences and social persuasion as key pillars in the development of efficacy beliefs. Usher and Pajares (2008) highlight that observing the success of peers and receiving constructive social feedback can significantly bolster an individual's confidence in their own analytical capabilities. This social dimension of the theory posits that environmental factors and interpersonal interactions are just as vital as personal history in shaping a person's resolve. Ultimately, the theory suggests that the interaction between these various sources determines the level of "agency" an individual exercises when navigating complex or ambiguous requirements (Luszczynska & Schwarzer, 2005).

Research competency is fundamentally defined as an integrated set of personal and professional qualities that enable an individual to solve problems through scientific inquiry. According to Visser (2022), it represents a complex combination of specialized knowledge and "transversal" skills, such as logical reasoning and the ability to synthesize contradictory information. This definition shifts the perspective of research from a purely academic exercise to a strategic tool for professional decision-making. At this level, competency is marked by a transition from simply following procedural steps to understanding the underlying logic that makes findings credible and applicable in real-world scenarios.

In addition to this conceptual shift, definitions emphasize the critical role of "methodological literacy," which is the capability to choose and defend specific techniques for data collection and analysis. Tiraieyari and Abu Samah (2011) describe research competency as the proficiency to handle the technical rigors of an investigation while maintaining a high standard of objectivity. This includes not only the mastery of software or statistical tools but also the intellectual discipline required to avoid bias. Competency, in this context, serves as a

safeguard against misinformation, ensuring that the researcher can distinguish between anecdotal evidence and scientifically sound data to provide reliable industry insights.

A broader perspective defines research competency through the lens of "self-directed inquiry," referring to the autonomy a researcher displays when facing unfamiliar questions. Cevallos et al. (2016) argue that true proficiency is evidenced by a person's ability to self-correct and refine their approach as a project evolves. This suggests that being research-competent involves a "doubting" mindset—one that constantly questions the validity of its own assumptions—as much as it involves technical skill. These varied definitions converge on the idea that research competency is the essential bridge between raw information and the creation of actionable, evidence-based knowledge.

Research competency is vital because it shifts students from being passive consumers of information to active generators of knowledge. According to Healey et al. (2020), engaging in research develops a "procedural understanding" of how knowledge is constructed, which is essential for academic success. By learning to identify gaps in existing literature and formulating their own inquiries, students develop higher-order thinking skills that allow them to move beyond rote memorization. This cognitive independence enables graduates to enter the workforce as strategic thinkers capable of evaluating information validity in a world filled with "noise" and misinformation.

Regarding professional growth, research skills are directly linked to enhanced employability and professional adaptability. In modern industries—including specialized sectors like hospitality—decisions are increasingly driven by data rather than intuition. Willison (2018) notes that students who possess strong research competencies are better equipped to handle "wicked problems" or ambiguous challenges that lack straightforward answers. The ability to systematically collect data, analyze trends, and communicate findings clearly is a high-value "soft skill" that allows graduates to remain relevant and adaptable as their industries evolve over time.

Research competency fosters a strong sense of ethical responsibility and civic engagement. Kandiko Howson and Pellow (2021) argue that the discipline required for scientific inquiry teaches students the importance of integrity, transparency, and ethical judgment. By understanding the rigors of methodology, students become more critical citizens who can make evidence-based decisions in their personal and public lives. This "scientific temper" ensures they are not easily swayed by bias or unfounded claims, making research competency a cornerstone for both professional excellence and responsible citizenship.

The development of practical research skills begins with the fundamental ability to navigate the information landscape effectively. According to Brahms (2021), the capacity to locate and utilize varied resources, including the strategic use of library systems and information technology, is a core requirement for modern inquiry. Beyond simply finding data, students must possess the discernment to choose between primary and secondary sources based on the specific needs of their investigation. This "resource fluency" ensures the research process is grounded in credible evidence, allowing students to build a solid evidentiary base before moving into more complex stages of data generation.

Expanding upon these foundational abilities, a critical dimension of practical competency is the technical ability to design and implement data collection tools. Creswell and Creswell (2022) emphasize that a researcher's proficiency is measured by their ability to select or design instruments appropriate for their specific research questions. This includes the functional skills of observing behavior accurately and the systematic generation of data. For students, mastering these practicalities is essential because it transforms a theoretical plan into a tangible scientific investigation. Without the skill to create reliable tools and record findings with precision, the validity of the final conclusions is significantly compromised.

The integration of basic computer literacy and digital tools is now indispensable for the execution of research. Ng (2015) argues that digital literacy is a "survival skill" in contemporary academia, as it enables students to manage, store, and process data with greater efficiency. Effective research requires a level of comfort with technology that allows for a seamless transition from data collection to organization. When students leverage information technology effectively, they reduce the risk of manual errors and enhance the overall rigor of their work. Collectively, these practical skills serve as the mechanical backbone of the research process.

The core of research competency lies in the cognitive ability to identify knowledge gaps and formulate logical pathways for investigation. According to Alvesson and Sandberg (2013), the capacity to recognize "gaps" in existing literature is a critical thinking skill that allows researchers to move beyond redundant studies. This process involves defining complex problems, generating specific research questions, and formulating hypotheses. By designing an appropriate theoretical or conceptual framework, students demonstrate an ability to organize abstract ideas into a structured plan, ensuring that the investigation remains focused and academically rigorous.

Analytical proficiency requires a high level of discernment regarding data interpretation and methodological limitations. Onwuegbuzie and Frels (2016) highlight the importance of "critical reading" and the ability to distinguish between subjective and objective information. This ensures that researchers recognize

when the provided information is sufficient to lay a clear basis for conclusions. Proficiency in this domain also involves evaluating the most appropriate methods for data analysis and comprehending the scope and limitations of a research design. Such rigor prevents overgeneralization and ensures that the resulting solutions are appropriate for their specific professional context.

The ability to synthesize analytical findings and share them through effective communication is the ultimate measure of a researcher's impact. Dannels (2015) argues that oral and written communication skills are "foundational competencies" that allow students to translate complex data into actionable insights. Effective communication involves creating solutions, evaluating alternatives, and choosing the best course of action to present to stakeholders. For students, mastering the expression of ideas ensures that their research contributes to the broader field, transforming individual inquiry into professional knowledge that is both accessible and persuasive.

The foundation of research competency is a personal attitude that recognizes the intrinsic value of inquiry within professional practice. According to Kyvik (2013), students who perceive research as a vital tool for professional improvement are more likely to engage in deep learning rather than superficial compliance. This appreciation for the "value of research" is essential in sectors like hospitality, where evidence-based decision-making leads to better service outcomes. By fostering a positive research disposition, students become proactive in seeking data-driven answers to real-world challenges, ensuring their work remains relevant to their future careers.

Alongside a positive attitude, research proficiency is strictly governed by adherence to the ethical principles that protect the integrity of the scientific process. Israel and Hay (2006) emphasize that ethical awareness is the "moral compass" of any investigation. This includes maintaining honesty in data reporting, respecting participant privacy, and ensuring the study causes no harm. Competent researchers must demonstrate a deep understanding of these principles from the outset, as ethical lapses—such as plagiarism or data manipulation—compromise the validity of findings. Adherence to these standards ensures that the knowledge produced is both trustworthy and socially responsible.

This combination of research attitude and ethics concludes with the successful design and implementation of studies that contribute to the body of knowledge. Mertens (2020) argues that the "implementation" phase is the ultimate test of professional maturity, requiring a balance of technical design and ethical constraints in real-time. Designing a study that is both scientifically rigorous and ethically sound requires a high level of responsibility and foresight. When students successfully navigate these complexities, they demonstrate that they have transitioned from being learners to being ethical practitioners capable of conducting research that meets international standards.

The primary importance of assessing research competency lies in identifying the "learning-doing gap," where students possess theoretical knowledge but lack the ability to apply it. According to Venkatesh et al. (2023), formal assessment allows educators to pinpoint specific areas—such as data analysis or ethical reasoning—where students struggle most. Without these assessments, institutions risk producing graduates who can follow instructions but cannot independently solve complex problems. By measuring competency levels, educators can move beyond grading "procedural compliance" and start evaluating a student's true analytical depth and cognitive independence.

In addition to diagnostic benefits, assessing these levels is essential for evidence-based curriculum development. Linn and Miller (2021) argue that assessment data provide the feedback loop necessary to determine if subjects like "Practical Research" are actually meeting their intended learning outcomes. For instance, if assessments show that students are proficient in technical formatting but weak in synthesizing literature, schools can adjust their teaching strategies to focus more on critical thinking. This ensures that the curriculum remains relevant to the evolving needs of higher education and the global workforce.

Measuring research competency is a vital predictor of professional success and employability. In a data-driven economy, employers value graduates who can objectively evaluate evidence and make sound decisions. Scurry and Blenkinsopp (2022) suggest that regular assessment builds a student's "research self-efficacy" by providing clear markers of growth and mastery. By quantifying proficiency in practical, analytical, and ethical domains, institutions can confidently certify that their graduates are not just degree holders, but strategic thinkers ready to handle the ambiguities of the modern professional world.

Visser (2022) conducted a study titled "Scientific thinking and research competency in the 21st century," which aimed to analyze the intersection between cognitive transversal skills and formal research training. The study focused on how internal logic affects external performance. The findings revealed that logical reasoning and the capacity to synthesize contradictory data are the strongest predictors of success in professional decision-making. This suggests that a student's ability to handle complex information is more critical to their career than technical rote skills alone.

In a more recent investigation, Al Yahmadi et al. (2025) examined "The scientific research competencies among postgraduate students in Omani universities" to measure competency levels across

different institutional types. The objective was to identify if public or private education environments influenced research skill acquisition. The salient results showed that students in public universities exhibited significantly higher competencies, with "defining the research problem" being the highest-rated skill among participants.

Gómez-Hurtado et al. (2021) explored the "Perception of university students on the development of research competencies" to understand how students perceive their own growth in autonomous knowledge generation. The study aimed to track the shift from guided instruction to independent inquiry. The results indicated a marked shift toward cognitive independence among students; however, the findings also highlighted that participants continued to struggle with complex statistical interpretation and data-driven arguments.

Focusing on the educational process, Healey et al. (2020) published "The role of research in student learning," which evaluated the impact of research-based learning (RBL) on undergraduate procedural knowledge. The aim was to determine if active participation in research construction improved academic outcomes. The study established that active engagement in the inquiry process, rather than passive reading, leads to a deeper scientific mindset and significantly higher academic retention rates.

Scurry and Blenkinsopp (2022) investigated the link between research proficiency and career readiness in their study, "Research skills and graduate employability." The research aimed to determine if these skills provide a competitive edge in a data-driven economy. The findings identified that "research self-efficacy"—the internal belief in one's ability to conduct inquiry—significantly boosts a graduate's confidence during job transitions and enhances their professional problem-solving capabilities.

In the domain of practical skills, Brahms (2021) conducted the study "Information literacy and the modern researcher" to determine the role of library systems and IT in modern academic inquiry. The research aimed to identify which foundational skills prevent errors in advanced research stages. The results found that "resource fluency," specifically the ability to distinguish between primary and secondary sources, is the most critical practical skill for preventing methodological errors.

Venkatesh et al. (2023) addressed the application of skills in their work, "Assessing the development of research skills in higher education." The study aimed to identify specific "learning-doing gaps" where students failed to translate theory into practice. The results revealed a significant disconnect: while students often passed theoretical examinations with high marks, they frequently failed to design valid data collection tools, suggesting a need for more hands-on, workshop-style instruction.

In the area of professional ethics, Kandiko Howson and Pellow (2021) authored "Professionalism and ethics in undergraduate research," which examined how ethical adherence influences the quality of student investigations. The study aimed to link moral judgment with scientific rigor. The salient results reported that students with high ethical awareness produced higher-quality, more transparent data sets, proving that ethical training directly improves the reliability of research findings.

Mertens (2020) evaluated student maturity in the study "Research and evaluation in education and psychology," specifically looking at the implementation phase of research projects. The aim was to observe how students handle real-time challenges. The findings determined that the ability to balance technical design with immediate ethical constraints is the "ultimate test" of a student's transition from a learner to a professional practitioner.

Finally, Pecson (2025) conducted a local assessment titled "Measuring the Research Competency Needs of University Student-Researchers" to validate a survey tool for Filipino student-leaders. The study aimed to pinpoint the specific technical needs of students in the Philippine context. The results discovered that while students generally feel competent, they require the most assistance in "constructing research titles" and "identifying researchable issues," pointing to a need for better problem-identification training.

Theoretical frameworks and contemporary studies reveal that research competency is an evolutionary, multi-dimensional process that integrates cognitive, practical, and ethical development. The journey from a novice student to a proficient researcher is defined by the transition from passive information absorption to active knowledge construction, a process heavily influenced by the presence of intentional support structures and the belief in one's own capabilities. When educators provide effective scaffolding within a student's zone of development, it fosters the cognitive independence necessary to bridge the gap between classroom theory and real-world application. This development is further solidified through a continuous cycle of experiencing and reflecting, which allows learners to transform abstract concepts into functional professional skills. Ultimately, a high level of research proficiency does not merely represent technical mastery; it signifies the cultivation of a scientific mindset characterized by ethical integrity, analytical rigor, and the agency to navigate complex professional challenges. Assessing these competencies is therefore essential, as it ensures that the educational experience successfully reconciles the learner's internal self-efficacy with the practical demands of scientific inquiry, preparing them for the strategic decision-making required in the modern workforce.

III. OBJECTIVE OF THE STUDY

This study evaluated the research competency levels of fourth-year Bachelor of Science in Hospitality Management (BSHM) students at the University in Cebu City with the end view of devising a proposed supplemental research guide designed to enhance the research proficiency of BSHM students. Specifically, this presents: 1) the demographic and academic profile of the respondents, focusing on their age, the location of the Senior High School (SHS) from which they graduated, their final grade in Research 2, their expected learnings in the field of research, and the research training they received during their senior high school years; 2) the assessment on the specific research competencies of the students across three primary domains: practical skills; problem-solving, thinking, and communication skills; and personal attitudes and professional ethics; 3) the results of significant relationships between the respondents' profiles and their level of research domain competency.

IV. MATERIALS AND METHODS

This section presents the research design, environment, respondents, and statistical treatment.

This study employed a descriptive-correlational research method to gather primary data on assessing the research competency of fourth-year BSHM students across three specific domains: practical skills; problem-solving, thinking, and communication skills; and personal attitudes and professional ethics.

The study was conducted at the College of Hospitality Management of the University in Cebu City, an academic department dedicated to developing professional competencies in the service and tourism sectors. The department provides a curriculum that integrates theoretical instruction with technical training in areas such as hotel and restaurant operations, tourism management, and culinary arts. Its facilities are designed to simulate industry environments, allowing students to apply classroom concepts in practical settings. As a key component of the university, the department emphasizes a balance between global hospitality standards and localized industry requirements, aiming to produce graduates who are technically proficient and research-oriented.

The respondents of this study consisted of ninety-five (95) fourth-year Bachelor of Science in Hospitality Management (BSHM) students officially enrolled at the University in Cebu City. These individuals were selected through purposive sampling, as they were in the final stages of their academic program where the application of the University Research Center's competency plan was most critical for their professional transition. Their demographic and academic profiles, specifically focusing on age, location of Senior High School (SHS) they graduated from, Research 2 grades, expected learning in research, and their Senior High School (SHS) research trainings, were analyzed to determine if these factors significantly related to their existing research competency levels.

The study utilized a structured survey questionnaire as the primary tool for data collection, which was specifically adapted from the University Research Center Competency Plan. This alignment ensured that the evaluation criteria were consistent with the institutional standards of the University. The instrument was divided into two distinct sections: the first part gathered the profile of the respondents, including their age, location of Senior High School (SHS) they graduated from, Research 2 grades, expected learning in research and their Senior High School (SHS) research training, while the second part assessed their competency across the three core domains of practical skills, problem-solving, thinking, and communication, and personal attitude and professional ethics. To ensure measurable results, a four-point Likert Scale was employed, allowing the ninety-five respondents to quantify their level of competency from highly competent to not competent.

The data gathering process began with a formal letter of request submitted to the University Administration and Dean of the College of Hospitality Management. Once administrative approval was granted, the protocol underwent University Ethics Review Committee evaluation to protect the ninety-five (95) respondents' rights and data privacy. Following ethics approval, the researcher coordinated with the University Registrar to obtain official Research 2 grades as verified academic profile data. The researchers then proceeded to orient the fourth-year BSHM students on the study's objectives and voluntary participation. Informed consent was secured before administering survey questionnaires via a secure platform, and retrieval was monitored to meet the target sample size of ninety-five (95). Finally, survey data and Registrar records were integrated into a master tabulation sheet, replacing personal identifiers with codes to ensure confidentiality during statistical treatment.

The data gathered from the ninety-five (95) respondents were subjected to various statistical treatments to address the specific sub-problems of the study. For the first sub-problem regarding the profile of the respondents, Frequency and Percentage Distribution were used to summarize data on age, location of the Senior High School they graduated from, Research 2 final grades, expected learnings in research, and Senior High School (SHS) research training. To determine the level of research competency across practical skill, problem-solving, thinking and communication, and personal attitude and professional ethics domains as outlined in the second sub-problem, the Weighted Mean was calculated. This average was interpreted using a designated four-point Likert scale to categorize the students' competency levels from Highly Competent to Not Competent. To address the third sub-problem concerning the significant relationship between the students' profiles and their

competency levels, the Pearson-r Correlation Coefficient was utilized. Specifically, this tool measured the strength and direction of the relationship between numerical variables. To test the null hypothesis, a Test of Significance (p-value) was conducted at a 0.05 level of significance.

V. RESULTS AND DISCUSSION

This section presents data collected from the respondents who were the fourth-year Bachelor of Science in Hospitality Management (BSHM) students officially enrolled at the University in Cebu City. The data presented includes the respondents' profile by age, the location where they graduated from Senior High School (SHS), their Research 2 final grades, their expected learnings in research, and the research training received in Senior High School (SHS). Further, this section presents the significant relationship between the students' profiles and their research competency levels. Table 1 shows the data.

Table 1. Profile of the Respondents (n=95)

Profile	Frequency	Percentage (%)
Age		
18 – 24 years old	86	91.0%
25 – 34 years old	9	10.0%
Senior High School (SHS) graduated from		
Cebu City	53	56.0%
Cebu Province	10	11.0%
Lapu-Lapu City	3	3.0%
Mandaue City	17	18.0%
Naga City	1	1.0%
Other	11	12.0%
Research 2 Final Grade		
1.10-1.50	31	32.63%
1.60-2.00	63	66.32%
3.00	1	1.05%
Expected Learnings in Research		
Mastery of the Scientific Method		
Formulating answerable and specific research questions	69	72.6%
Designing research studies that minimize bias	47	49.5%
Identifying research gaps through literature reviews	62	65.3%
Critical Thinking & Information Literacy		
Distinguishing between peer-reviewed studies and biased reports	55	57.9%
Identifying logical fallacies and relying on evidence-based data	64	67.4%
Synthesizing multiple sources into a coherent argument	43	45.3%
Data Literacy and Technical Skills		
Understanding statistical significance and using analytical software	52	54.7%
Mastering qualitative techniques (interviewing, coding, observation)	54	56.8%
Understanding research ethics, informed consent, and data integrity	68	71.6%
Resilience and Problem-Solving		
Managing research setbacks and inconclusive data	52	54.7%
Enhancing attention to detail in data	77	81.1%

collection and analysis		
Communication Excellence		
Developing precise, concise, and objective academic writing	64	67.4%
Creating effective data visualizations (charts/graphs)	47	49.5%
Presenting findings through public speaking and oral defenses	62	65.3%
Research Trainings Received in Senior High School (SHS): (Based on DepEd Order No. 16, s. 2017)		
***Curriculum-Based Subjects Completed*:**		
Practical Research 1(Qualitative)	60	63.2%
Practical Research 2(Quantitative)	71	74.7%
Inquiries, Investigations, and Immersion (3Is)	34	35.8%
***Key Competencies Acquired*:**		
Ethics: Anti-Plagiarism and informed consent protocols	73	76.8%
Technical Writing: Use of APA, MLA, or Chicago styles	53	55.8%
Instrumentation: Creating and validating surveys/interview guides	64	67.4%
Data Analysis: Using software (Excel, SPSS, etc.) or thematic coding	50	52.6%

Table 1 shows the demographic profile and revealed that a vast majority of the respondents fell within the 18–24-year-old age bracket, accounting for 91% of the total sample. This data signified that the participants were predominantly young adults belonging to Generation Z. Such a distribution was expected within the Philippine academic context, as the implementation of the K-12 Basic Education Program typically resulted in students reaching their fourth year of higher education in their early twenties.

According to Dela Sierra and Pepito (2024), this transition has successfully aligned the age of Filipino college graduates with global standards, ensuring that senior students possess a more mature developmental profile as they prepare for professional practice

In addition, a significant majority of the respondents graduated from Senior High School (SHS) within Cebu City, representing 56% of the total sample. This implied that the identified research competencies were largely reflective of the educational standards and instructional environments found within the city's secondary educational system. Furthermore, the data indicated that the 4th-year student population in the College of Hospitality Management was primarily composed of local urban residents, likely due to the university's proximity.

According to Ball et al. (2021), location is often the most significant factor for students from urban areas. Choosing a local university allows students to save on "room and board" costs and transportation, making higher education more accessible for residents.

Conversely, the Research 2 final grades showed that 63 respondents, or 66.32%, earned a grade between 1.6 and 2.0. This indicated that the majority of the students demonstrated a high level of academic achievement and a strong grasp of advanced research competencies. Such a high concentration of above-average grades implied that the instructional strategies and research environments within the university were effective in developing the students' ability to execute complex research tasks.

In most Philippine grading systems, a 1.6–2.0 range is equivalent to "Very Good" or "Superior." This infers that the students are not just passing, but are excelling in the application of research methodologies (Tan, 2019).

Regarding the expected learning outcomes in research, the results indicated that a substantial number of the 95 respondents prioritized the mastery of scientific methods. Specifically, 72.63% of the students expressed a desire to master the formulation of answerable and specific research questions. This indicated that students recognized that structured inquiry was the foundation of professional decision-making. The desire to formulate answerable and specific questions implied a move away from passive learning toward active problem-solving.

Chu et al. (2021) argue that mastering the scientific method in a professional context allows students to bridge the gap between classroom theory and industry practice through Inquiry-Based Learning (IBL).

In the domain of critical thinking and information literacy, 67.37% of the respondents highlighted the importance of identifying logical fallacies and utilizing evidence-based data. This denoted that in an era of fake

news and data saturation, students were prioritizing the ability to filter information. This implied a high level of intellectual skepticism, which was vital for hospitality managers who must evaluate market trends and competitor data without falling for logical fallacies.

The ACRL (2016) framework posits that "Information has Value." Students seeking these skills are preparing for professional environments where evidence-based data is the only reliable basis for strategy.

Data literacy and technical skills were also highly valued, with 71.58% emphasizing the necessity of understanding research ethics, informed consent, and data integrity. This inferred that the focus on ethics, informed consent, and data integrity implied students were aware of Global Data Privacy laws. This indicated that they were being trained to handle sensitive guest information with high moral and legal standards.

Pangestu (2022) notes that data literacy is no longer optional in hospitality; it is a core competency for modern managers who must balance data-driven insights with ethical responsibility.

Furthermore, the highest frequency was observed in the area of resilience and problem-solving, where 81.05% of the respondents sought to enhance their attention to detail during the data collection and analysis phases. This inferred that this domain received the highest frequency, indicating that students viewed the tedium of data collection and analysis as a form of character building. This implied that hospitality students valued grit and the attention to detail necessary for operational excellence and quality control.

Okumus et al. (2020) emphasize that "attention to detail" in research directly translates to the hospitality industry's focus on guest satisfaction and error-free service delivery.

Finally, in terms of communication excellence, 67.37% of the respondents were expected to develop precise, concise, and objective academic writing skills. The expectation to develop precise and objective writing implied that students were preparing for corporate communication. They recognized that research was only valuable if its findings could be clearly communicated to stakeholders through reports, proposals, and presentations.

Whitelaw (2019) states that communication in hospitality research is about "translating data into action," a skill that is critical for career advancement into executive roles.

Regarding the research trainings received during Senior High School (SHS), the majority of respondents (74.70%) had completed Practical Research 2 (Quantitative Research) as part of their curriculum-based subjects, in accordance with DepEd Order No. 16, s. 2017. The high compliance rate (74.70%) reflected a successful vertical alignment of the Philippine education system. In addition, it denoted that the K-12 curriculum had been specifically designed to ensure that students entering higher education were no longer research novices.

Alberca and Casinillo (2020) highlighted that students who completed the SHS research track demonstrated higher mathematical logic and statistical reasoning.

Furthermore, in terms of key competencies acquired, 76.80% of the respondents identified Research Ethics, specifically anti-plagiarism and informed consent protocols, as a primary skill gained during their secondary education. This implied that the culture of integrity was deeply rooted in the secondary education system at the time of their studies.

Limos-Galay and Galay (2020) posit that SHS students in the Philippines demonstrate a "high level of awareness" regarding plagiarism, which they attribute to the rigorous enforcement of citation standards in the SHS research subjects.

Table 2. The Level of Research Competency Among the Fourth-Year Bachelor of Science in Hospitality Management (BSHM) Students at the University in Cebu City in terms of Practical Skills (n=95)

Indicators	Weighted Mean	Interpretation
1. Be able to find and make use of resources and literatures	3.51	Highly Competent
2. Be able to use the library and information technology effectively	3.32	Highly Competent
3. Be able to recognize and determine when to use primary and secondary resources	3.36	Highly Competent
4. Design the appropriate tool to generate data necessary to draw conclusion	3.23	Competent
5. Be able to observe and record behavior	3.33	Highly Competent
6. Be able to generate data	3.37	Highly Competent
7. Be able to demonstrate basic computer literacy	3.42	Highly Competent
Overall Weighted Mean	**3.36**	**Highly Competent**

Table 2 presented the research competencies of the respondents in terms of practical skills. The data showed that the highest weighted mean of 3.51 indicated that respondents were highly competent at finding and

using resources and literature. It implied that the respondents possessed a strong foundational ability to navigate academic databases, identify relevant literature, and integrate external sources into their work. This was often considered the entry point of the research process; without the ability to find and utilize existing knowledge, subsequent steps like gap analysis or methodology design would have been impossible.

Boote and Beile (2005) argue that a researcher must be a "scholar" (one who knows the literature) before they can be a "researcher" (one who generates new data).

The lowest weighted mean of 3.23 indicated that the respondents were competent in designing the appropriate tool to generate data necessary to draw conclusions. It implied that the respondents felt slightly less confident in the technical task of creating original research instruments, such as validated surveys or interview protocols. This meant that while they understood the what and why of research, the how, specifically instrument construction, was the primary area requiring further training.

Kimberlin and Winterstein (2008) highlight that while many researchers understand research concepts, the actual construction of an instrument requires specialized knowledge of psychometrics.

The overall weighted mean of 3.36 indicated that the respondents were highly competent in their research practical skills. This meant that the respondents possessed a strong grasp of the practical skills required to conduct academic research. This high level of proficiency implied that they were well-equipped to navigate the early and middle stages of investigation, including data retrieval, the effective use of technology, and the systematic recording of observations and interview results.

Lizzio and Wilson (2004) emphasize that "foundational academic competence", specifically the ability to find and organize information, is the strongest predictor of a student's success in later, more complex research tasks.

Table 3. The Level of Research Competency Among the Fourth-Year Bachelor of Science in Hospitality Management (BSHM) Students at the University in Cebu City in terms of Problem Solving, Thinking And Communication Skills (n=95)

Indicators	Weighted Mean	Interpretation
1. **Be able to identify, define and analyze problems**	3.42	Highly Competent
2. **Formulate hypothesis**	3.26	Highly Competent
3. **Design the most appropriate framework of the topic**	3.26	Highly Competent
4. **Create solution and evaluate them and choose the best alternative to for a particular context**	3.34	Highly Competent
5. **Design appropriate research procedure and be able to comprehend the limitations and scope of research design**	3.32	Highly Competent
6. **Evaluate the most appropriate method of analyzing and interpreting the available data**	3.33	Highly Competent
7. **Comprehend the difference between subjective and objective information**	3.34	Highly Competent
8. **Recognize when information provided is sufficient**	3.31	Highly Competent
9. **Analyze the gaps in the literature that would necessitate the conduct of the investigation**	3.33	Highly Competent
10. **Evaluate when the basis for conclusions is laid out completely and clearly**	3.26	Highly Competent
11. **Generate research questions by recognizing gaps in knowledge**	3.33	Highly Competent
12. **Use oral and written communication to express ideas effectively**	3.37	Highly Competent
Overall Weighted Mean	**3.33**	**Highly Competent**

Table 3 presented the level of research competency of the respondents in terms of problem solving, thinking, and communication. The data showed that the highest weighted mean was 3.42, indicating that the respondents were highly competent in identifying, defining, and analyzing problems. This implied that the respondents possessed a keen analytical mindset, enabling them to deconstruct complex issues into researchable components and establish a clear logical framework for their investigations.

According to Al-Raqqad et al. (2024), a well-defined problem serves as the foundation upon which all subsequent methodological choices are built. Researchers who demonstrate high competency in problem analysis are better equipped to avoid "methodological drift" and ensure that their study remains focused on addressing a specific knowledge gap.

The lowest weighted mean of 3.26 indicated that the respondents were highly competent in formulating hypotheses, designing the most appropriate frameworks for their topics, and evaluating when the basis for conclusions had been laid out completely and clearly. This finding implied that the respondents demonstrated a high level of competency in their thinking and problem-solving skills, particularly in structuring the logical foundations of a study. Although this score was the lowest in the category, it remained within the highly competent range, signifying that the abstract nature of framework design and hypothesis testing represented a more complex cognitive demand than direct problem identification. It further indicated that the respondents possessed strong communication skills in laying out clear conclusions, while the synthesis of complex variables within their research frameworks served as the specific area where their high competency was most thoroughly tested.

According to Adom et al. (2022), this process is inherently more abstract than initial problem identification, which accounts for variations in competency scores even within high-performing groups. Furthermore, Grant and Osanloo (2020) emphasize that high competency in framework design and hypothesis formulation is indicative of a researcher's ability to maintain logical consistency throughout the inquiry process.

The overall weighted mean was 3.33, indicating that the respondents were highly competent in terms of problem-solving, thinking, and communication. This finding implied that the respondents possessed a unified mastery of the cognitive and communicative demands of the research process. Their problem-solving, thinking, and communication skills signified a strong ability to transition from the conceptual phase of identifying gaps and formulating hypotheses to the technical phase of designing procedures and articulating conclusions. Further, it demonstrated that the respondents were well-equipped to manage the intellectual complexities of scholarly inquiry.

Al-Raqqad et al. (2024) say that when people can think through a problem and then explain it clearly, they are ready to do research on their own. Nurutdinova (2023) also points out that being able to talk about your work clearly shows that you truly understand the difficult parts of your study.

Table 4. The Level of Research Competency Among the Fourth-Year Bachelor of Science in Hospitality Management (BSHM) Students at the University in Cebu City in terms of Personal Attitudes and Professional Ethics (n=95)

Indicators	Weighted Mean	Interpretation
1. **Demonstrate an appreciation of the necessity and value of research in practice**	3.47	Highly Competent
2. **Demonstrate an awareness and adherence of ethical principles underpinning research**	3.47	Highly Competent
3. **Design and implement research studies**	3.40	Highly Competent
Overall Weighted Mean	**3.45**	**Highly Competent**

Table 4 presented the level of research competency of the respondents in terms of personal attitudes and professional ethics. The highest weighted mean of 3.47 indicated that the respondents were highly competent in demonstrating an appreciation of the necessity and value of research in practice and demonstrating an awareness and adherence to the ethical principles underpinning research. This implied that the respondents had a strong professional foundation, showing that they not only understood why research mattered in the real world but were also deeply committed to doing it honestly and safely.

According to Faltado (2022), when researchers appreciate the value of their work, they are more likely to produce high-quality and reliable data. Furthermore, Resnik (2023) notes that a high awareness of ethics is essential for maintaining public trust and ensuring that the research process does no harm to participants or the community.

The lowest weighted mean of 3.40 indicated that the respondents were highly competent in designing and implementing research studies. This implied that the respondents had the necessary skills to put their research plans into action. This score was the lowest in the category because the actual doing of research, such as managing data and technical tools, was naturally more demanding and complex than understanding research values or ethics. Even so, the high score showed that the respondents were fully capable of handling these practical challenges.

Adom et al. (2022) noted that implementation requires a researcher to manage real-world variables and technical tools, which is why it often yields slightly lower competency scores compared to theoretical knowledge.

Table 5. Result of Test of Significant Relationship between the Age of the Respondents and their Level of Competency in terms of Practical Skills, Problem Solving, Thinking and Communication, and Personal Attitude and Professional Ethics (n=95)

Variables	Standard Deviation	Computed R-Value	P-Value	Decision	Interpretation
***Age* vs.**					
Practical skills	0.4545	0.1824	0.0769	Accept H0	No Significant Relationship
Problem Solving, Thinking and Communication	0.5099	0.1746	0.0906	Accept H0	No Significant Relationship
Personal Attitude and Professional Ethics	0.5273	0.1429	0.1672	Accept H0	No Significant Relationship

**Significant if the P-value is equal or less than 0.05*

Table 5 presented the results of the test of significant relationship between the age of the respondents and their level of competency in terms of practical skills, problem solving, thinking and communication, and personal attitude and professional ethics. Table 5 illustrated that there was no statistically significant relationship between the age of the respondents and their competency levels. With p-values for practical skills (0.0769), problem-solving, thinking and communication (0.0906), and personal attitude and professional ethics (0.1672) all exceeding the 0.05 alpha level, the null hypothesis was accepted. This indicated that age was not a determining factor in a student's proficiency. Instead, these competencies appeared to be independent of chronological maturity, signifying that a student's ability to solve problems, communicate, or maintain their attitude and ethics effectively was shaped by merit-based performance and specific academic training rather than how old they were.

According to Ericsson and Pool (2016), professional expertise is primarily a result of deliberate practice rather than chronological maturation. Further, in a standardized educational setting, students of varying ages may demonstrate equivalent levels of proficiency because they are exposed to the same academic rigor and performance metrics (Lipnevich & Roberts, 2012).

Table 6. Result of Test of Significant Relationship between the Senior High School Graduated from of the Respondents and their Level of Competency in terms of Practical Skills, Problem Solving, Thinking and Communication, and Personal Attitude and Professional Ethics (n=95)

Variables	Standard Deviation	Computed R-Value	P-Value	Decision	Interpretation
***SHS Location* vs.**					
Practical skills	0.4618	0.0458	0.6597	Accept H0	No Significant Relationship
Problem Solving, Thinking and Communication	0.5179	0.0088	0.9328	Accept H0	No Significant Relationship
Personal Attitude and Professional Ethics	0.5313	0.0727	0.4838	Accept H0	No Significant Relationship

Significant if the P-value is equal or less than 0.05

Table 6 presented the results of the test of significant relationship between the Senior High School (SHS) the respondents had graduated from and their level of competency in terms of practical skills, problem solving, thinking and communication, and personal attitude and professional ethics. The findings indicated that the location of the SHS, whether urban, rural, or across various municipalities, did not significantly impact levels of research competency. With p-values ranging from 0.4838 to 0.9328, the data implied that the foundational education regarding research core competencies was standardized across different locations. This denoted that students from diverse SHS backgrounds entered the program with a comparable baseline of research skills.

The Philippine Department of Education (DepEd) designed the K-12 curriculum to be "seamless, relevant, and holistic," ensuring that a student in a remote municipality receives the same core competencies as one in a highly urbanized city (Department of Education, 2012).

Table 7. Result of Test of Significant Relationship between the Research 2 Final Grades of the Respondents and their Level of Competency in terms of Problem Solving, Thinking and Communication, and Personal Attitude and Professional Ethics (n=95)

Variables	Standard Deviation	Computed R-Value	P-Value	Decision	Interpretation
***Research 2 Final Grades* vs.**					
Practical skills	0.4583	0.1300	0.2091	Accept H0	No Significant Relationship
Problem Solving, Thinking and Communication	0.5095	0.1788	0.0829	Accept H0	No Significant Relationship
Personal Attitude and Professional Ethics	0.5287	0.1234	0.2334	Accept H0	No Significant Relationship

Significant if the P-value is equal or less than 0.05

Table 7 presented the results of the test of significant relationship between the Research 2 final grades of the respondents and their level of competency in terms of practical skills, problem solving, thinking and communication, and personal attitude and professional ethics. The correlation analysis in Table 7 indicated that there was no statistically significant relationship between the respondents' Research 2 final grades and their measured levels of competency. Since the p-values for practical skills (p=0.2091), problem-solving, thinking and communication (p=0.0829), and personal attitude and professional ethics (p=0.2334) all exceeded the 0.05 alpha level, the null hypothesis was accepted. These results implied that a student's final grade in Research 2 was not a definitive predictor of their research competency. This denoted that while the Research 2 subject prioritized specific academic outputs, such as research manuscript writing, and ethical judgment, competency such as communication was likely developed through diverse experiences outside of that specific subject/course.

Bieschke (2006) suggests that a student's belief in their competency is often detached from their actual grade. Competency is built through interest and hands-on involvement, whereas grades are often the result of meeting specific rubric requirements.

Table 8. Result of Test of Significant Relationship between the Expected Learnings in Research of the Respondents and their Level of Competency in terms of Practical Skills, Problem Solving, Thinking and Communication, and Personal Attitude and Professional Ethics (n=95)

Variables	Standard Deviation	Computed R-Value	P-Value	Decision	Interpret
Expected Learning vs.					
A. Mastery of the Scientific Method					
Practical Skills	0.454899	0.207074	0.43421	Accept H0	No Significant Relationship
			0.353931		
			0.065119		
Problem Solving, Thinking and Communication	0.515481	0.151697	0.854309	Accept H0	No Significant Relationship
			0.263016		
			0.282683		
Personal Attitude and Professional Ethics	0.530389	0.171598	0.531614	Accept H0	No Significant Relationship
			0.229094		
			0.20026		
B. Critical Thinking & Information Literacy					
Practical skills	0.456236	0.192983	0.449431	Accept H0	No Significant Relationship
			0.311358		

			0.292984		
Problem Solving, Thinking and Communication	0.456236	0.211332	0.27878	Accept H0	No Significant Relationship
			0.26055		
			0.388336		
Personal Attitude and Professional Ethics	0.520045	0.258714	0.149706	Accept H0	No Significant Relationship
			0.100428		
			0.693923		
C. Data Literacy and Technical Skills					
Practical skills	0.463899	0.068041	0.660784	Accept H0	No Significant Relationship
			0.863798		
			0.687183		
Problem Solving, Thinking and Communication	0.519925	0.078069	0.759342	Accept H0	No Significant Relationship
			0.483942		
			0.875557		
Personal Attitude and Professional Ethics	0.536551	0.082247	0.876719	Accept H0	No Significant
			0.85729		
			0.478203		
D. Resilience and Problem-Solving					
Practical skills	0.44506	0.271393	0.109843	Accept H0	No Significant Relationship
			0.009387	Reject H0	Significant
Problem Solving, Thinking and Communication	0.509434	0.187608	0.299547	Accept H0	No Significant Relationship
			0.074096		
Personal Attitude and Professional Ethics	0.529381	0.149634	0.207975	Accept H0	No Significant Relationship
			0.234069		
E. Communication Excellence					
Practical skills	0.45702	0.184204	0.255568	Accept H0	No Significant Relationship
			0.843314		
			0.158643		
Problem Solving, Thinking and Communication	0.511571	0.194359	0.254776	Accept H0	No Significant Relationship
			0.501627		
			0.12755		
Personal Attitude and Professional Ethics	0.526983	0.204627	0.089809	Accept H0	No Significant Relationship
			0.663359		
			0.270139		

Significant if the P-value is equal or less than 0.05

Table 8 presented the results of the test of significant relationship between the expected learnings in research of the respondents and their level of competency in terms of practical skills, problem solving, thinking and communication, and personal attitude and professional ethics. In Table 8, the data showed a non-significant

relationship across the majority of domains. Consequently, the null hypothesis was accepted for Mastery of Scientific Methods, Critical Thinking, Data Literacy, and Communication Excellence.

Interestingly, the only exception occurred in the area of Resilience and Problem-Solving, specifically in relation to Practical Skills. The rejection of the null hypothesis in this area meant that a student's preparedness for the psychological and adaptive challenges of research was a meaningful predictor of hands-on proficiency. This implied that anticipating the trial-and-error nature of the research process, and maintaining the grit to navigate it, was more vital to developing practical skills than simply expecting to master technical theory. Essentially, students who had enrolled in the Research 2 subject/course expecting to be challenged to figure things out were the only group to demonstrate a statistically significant link to actual skill improvement.

Duckworth et al. (2007), who asserted that perseverance is the primary driver of success in complex, long-term tasks. In a research environment, which involves high-level problem-solving and constant technical adjustments, a student's willingness to adapt and 'figure things out' becomes more critical than their demographic background or prior academic marks. Furthermore, as noted by Richardson et al. (2012), psychological factors like self-efficacy and resilience often override traditional performance metrics, providing a clearer indication of a student's functional competency in a research-intensive environment.

Table 9. Result of Test of Significant Relationship between the Research Training in Senior High School (SHS) of the Respondents and their Level of Competency in terms of Practical Skills, Problem Solving, Thinking and Communication, and Personal Attitude and Professional Ethics (n=95)

Variables	Standard Deviation	Computed R-Value	P-Value	Decision	Interpret
Research Training in Senior High School (SHS) vs.					
A. Curriculum-Based Subjects Completed					
Practical Skills	0.46238	0.105549	0.411274	Accept H0	No Significant Relationship
			0.632385		
			0.899655		
Problem Solving, Thinking and Communication	0.516895	0.132834	0.422915	Accept H0	No Significant Relationship
			0.38158		
			0.866068		
Personal Attitude and Professional Ethics	0.534787	0.115253	0.570496	Accept H0	No Significant Relationship
			0.630189		
			0.674872		
B. Key Competencies Acquired					
Practical Skills	0.449844	0.272821	0.800637	Accept H0	No Significant Relationship
			0.127016		
			0.975889		
			0.282425		
Problem Solving, Thinking and Communication	0.516776	0.170316	0.43861	Accept H0	No Significant Relationship
			0.501091		
			0.763705		
			0.253472		
Personal Attitude and Professional Ethics	0.524947	0.244594	0.426331	Accept H0	No Significant Relationship
			0.076949		
			0.889356		
			0.543681		

Significant if the P-value is equal or less than 0.05

Table 9 presented the results of the test of significant relationship between the research training in Senior High School (SHS) of the respondents and their level of competency in terms of practical skills, problem solving, thinking and communication, and personal attitude and professional ethics. The results found in Table 9 showed that neither the number of curriculum-based subjects completed nor the competencies students felt they had gained in the past had a significant relationship with their skills at the time of the study. With p-values reaching as high as 0.97, the null hypothesis was accepted across the board.

This implied that Senior High School (SHS) research training served as a general introduction but did not necessarily dictate a student's mastery in a more advanced Research 2 setting. It indicated that the respondents' performance was driven more by the immediate demands of their then-present subject/course rather than their previous academic background. Essentially, having an extensive research foundation from SHS did not provide a student with a statistically significant advantage in practical skills or professional ethics over those with less exposure. Whether a student had completed specific research subjects or perceived themselves to have acquired key competencies in SHS, these factors did not statistically alter their performance in Research 2.

As Venezia and Jaeger (2013) noted, a significant misalignment often exists between high school curricula and the advanced expectations of specialized courses, which can render prior exposure less predictive of future performance. Furthermore, Conley (2007) posits that academic success in higher-level subjects depends more on a student's ability to meet new, rigorous standards than on the mere completion of prerequisite subjects. This suggests a 'leveling of the playing field' within the Research-intensive environment, where current achievement is driven by immediate effort and cognitive adaptation rather than the quantity of research subjects taken in the past (Hailikari et al., 2007).

VI. CONCLUSIONS

The study concluded that fourth-year BSHM students achieved a high level of research competency in practical skills, problem-solving, thinking and communication, and personal attitude and professional ethics. These results demonstrated that mastery was not determined by age, Senior High School strand, prior academic grades, or SHS research training, indicating that competence development was independent of demographic background or previous academic performance. Instead, resilience emerged as the sole significant driver of achievement, indicating that success was less a function of theoretical knowledge and more a result of grit and psychological adaptability. These findings highlighted that their capacity to manage setbacks and maintain attention to detail dictated functional expertise. Consequently, competence was best understood as an active, functional capacity developed through persistence and problem-solving required to manage the inherent complexities of the scientific process.

To sustain the high level of research competency identified among Bachelor of Science in Hospitality Management (BSHM) students, the College of Hospitality Management should institutionalize its existing formal mentorship program and resilience-based pedagogy. The college should continue to refine its process-oriented mentorship by formally rewarding methodological adaptability and grit within its core research subjects. Integrating these psychological and adaptive drivers will preserve the quality of research mentorship, ensuring a uniform and high-level training experience for every BSHM student.

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