Graduates' Employability:
Hospitality Industry 4.0 and Skill Gaps in Egypt

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The study aims to examine the alignment between the skills required by the hospitality industry and the skills possessed by hospitality higher education graduates in response to Industry 4.0, which affects graduates' employability. In addition, the study aims to explore skill gaps in the hotel management curriculum that negatively affect graduates' employability and to highlight the essential skills that are crucial for hotel operators while recruiting fresh graduates for entry-level hotel jobs. The research instrument comprises 38 skills based on four studies to constitute a broad framework of employability skills. The research targeted a total sample of 145 professional managers, representing five operational managers in 29 5-star hotels in Cairo. The results revealed unalignment between hospitality industry requirements and higher education deliverables, and unfortunately, gaps were identified in all skills. Moreover, the result emphasized the great concern that the hospitality industry gives to soft skills and personal attitudes as a basis for its employability, which demands a careful revision of hotel management curricula to treat any shortages in skills and ensure the fulfillment of hospitality industry requirements to enhance graduates' employability.

Keywords: *industry 4.0, employability skills, curriculum, soft skills, skill gaps*

Introduction

The hospitality market has no longer been stable, and the competition has become fierce (Espellita and Maravilla Jr 2019), which requires hotel operators to find new ways to satisfy their guests by providing the expected and unexpected services that can create the wow experience needed to maintain guests' satisfaction and retention (Ruel and Njoku 2021). No doubt, this aim will not happen without having the right employees who are qualified to perform service tasks properly. Therefore, having the right employees is crucial for attaining success.

Unfortunately, finding the right employees is not easy. According to many scholars, the hospitality industry is facing a significant challenge concerning employment because fresh graduates lack the necessary skills needed by the industry that make them ready for the workplace (Abas-Mastura et al. 2013, Fajaryati et al. 2020, Mourshed et al. 2012). Several surveys declared that it's difficult for hotel operators to find entry-level employees with suitable skills, despite the high level of unemployment (Matsouka and Mihail 2016). According

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to Fajaryati et al. (2020), about 75 million young people in developing countries are suffering from unemployment, and their unemployment rates have reached 2 to 4 times higher than those of adults. In 2023, the Manpower Group conducted a global survey to distinguish the lack of skills and talent among 41,000 employers in 42 countries. The result was that 77% of global employers reported difficulty in finding skilled and talented employees needed to fill available work occupations, which led 55% of global employers to hire employees from outside their countries to fill employment gaps (Manpower Group 2023).

Nevertheless, in the last few years, the employment problem has gotten bigger due to the emergence of a new industrial revolution called Industry 4.0, which is characterized by its technological developments such as CPS, IoT, AR, VR, AI and robotics, big data, blockchain, and 3D printing (Ben Youssef and Zeqiri 2022, Schwab 2017, Verevka 2019) that depend on digital technology, automated processes, and robotics (Drexler and Lapré 2019). This new technology is expected to change everything we are used to doing and reshape our way of living, dealing with one another, managing relationships with others, and doing business (Osei et al. 2020). In addition, Industry 4.0 will affect individuals, organizations, and societies' behavior and standards (Liyanage 2012) and lead to changes in the operators' requirements for skills and the number of manpower used (OECD 2018).

In the same context, the World Economic Forum (2020) has reported that technology adoption will continue to rise, and by 2025, companies will start to transform their jobs, tasks, and skills to match the prevailing technologies. This transformation, as indicated by 43% of business surveys, will lead to a decrease in jobs and workforce numbers as a result of technology integration between humans and machines, as well as an accelerated level of destruction for traditional jobs. The report expected that by 2025, about 15% of a company's workforce will be at risk of disruption, about 6% of employees are estimated to be fully displaced, and about 44% of the effectively used skills will be changed.

Concerning Egypt, the unemployment rate has been on the rise. According to the Central Agency for Public Mobilization and Statistics (CAPMAS), there were 2.263 million unemployed individuals out of a total workforce of approximately 31.956 million, representing 7.1% in the third quarter (Q3) of 2023, which is expected to increase in the first quarter of 2024, to reach 7.5% (IMF 2024).

Concerning the hospitality industry, hotel management graduates experience a shortage of the necessary skills, which makes them less relevant to the industry, and thus less attractive for hotel recruitment (Hossny 2018), which affects the graduates' employability and leads to an increase in unemployment and underemployment among higher education graduates (Brewer 2013, Ejiwale 2014, Ramisetty and Desai 2017, Crespin et al. 2019).

Unfortunately, this shortage is not only for the time being; it has lasted for a long time. According to Raybould and Wilkins (2005), hotel operators complained of the extremely low supply of skilled employees who have hospitality academic qualifications, particularly in the hotel management department. The reason is that graduates' skills are not aligned with industry requirements, resulting in a gap between hospitality higher education and the requirements of the hospitality

industry because what the hospitality educators teach to students does not represent the actual needs of the industry (Adeyinka-Ojo 2018, Bathla et al. 2019, Hossny 2018, Kanter 2013, Singh and Singh 2008).

For that, hospitality operators are becoming more suspicious of hospitality graduates' skills as a result of the inadequate skill preparation that the hospitality higher institutes offer for students (Abbasi et al. 2018, Bathla et al. 2018, El Mansour and Dean 2016), which leads to graduates' failure to get suitable job opportunities (World Bank 2015). Therefore, an increasing gap between what graduates are taught in higher education and what the hotel industry needs exists, which led to a problem facing graduates in their transition from their educational institutes to the industry (Hossny 2018). Consequently, to be able to produce qualified and employable graduates from an industry perspective, hospitality higher education must study and analyze the current and future requirements of the hospitality industry and develop hotel management curricula to reflect these requirements. This will help to ensure that graduates are outfitted with suitable, sufficient, and industry-relevant competencies (Hossny 2018) that can effectively lead to enhanced graduate employability.

However, hospitality is a fast-moving industry that needs to be fully updated with services and qualified employees to act well with unexpected market challenges. Therefore, research that investigates the alignment between the requirements of skills for the hospitality industry and the deliverables of hospitality higher education is continually required to ensure the sustainability of enhancing graduates' employability.

For that, the researchers have formulated the following questions to be tested during the study:

1. Are the Egyptian hospitality higher education deliverables aligned with the current requirements of the hotel industry?
2. What are the gaps that the hotel operators detected in newly hired graduates' skills?
3. What are the skills that the hotel operators consider most when recruiting entry-level employees?

The research results will be beneficial for all hospitality stakeholders because the results are expected to fill the shortage of knowledge and data on the relationship between the hospitality industry and higher education deliverables in Egypt. The benefits will be as follows:

- Concerning higher education, the research results are expected to enable academics to discover the gaps in the curricula from an industry perspective to bridge them. In addition, identifying the most important skill for hotel operators to put the proper weight on those skills when designing the curriculum.
- Concerning the hospitality industry, the research results are expected to help the industry by providing a sufficient qualified number of fresh graduates equipped with the required skills at a competence level, which

will lead to improved service delivery and support expansion policies for the industry.

- Concerning students, the research results are expected to make them fully aware of the important skills needed for their recruitment acceptance, besides being ready to proceed in the hospitality career successfully.
- Concerning the government, the research results are expected to enhance graduates' employability inside and outside the country, reduce the rate of unemployment, enhance individual lifestyles, and create a state of satisfaction.

Literature Review

Potential of Tourism and Hospitality Industry in Egypt

Egypt occupies a distinct location, climate, history, and societal diversity, making it a focus of attention for tourists worldwide. According to the Travel and Tourism Development Index 2021, Egypt has ranked 51st in the list of world-attractive destinations in 2021, achieving the second-greatest improvement percentage (+4.3%) in the Middle East and North Africa region after the United Arab Emirates for 2019 to 2021, which enabled Egypt to change its rank from 57th to 51st in the 2021 index (World Economic Forum 2022).

According to Egypt's Ministry of Tourism and Antiquities report, the country received 3.5 million tourists during the first half of 2021, averaging about 400,000 arrivals per month. This number of visitors has garnered revenues estimated at $3.5 to $4 billion, which is about 40% of COVID-19 pre-pandemic revenue levels, but it is a sign of the start of tourism recovery (Ahramonline 2022, AmCham Egypt 2022). Concerning the contribution of travel and tourism to Egyptian GDP, Galal (2024) has reported in Statista that Egyptian travel and tourism have contributed 7.7 percent of Egypt's Gross Domestic Product (GDP). The report confirms that this percentage is developed in comparison to 2020, after a decline in 2019 due to the pandemic's impact on the travel and tourism sector. However, statistics expect an increase in the contribution of travel and tourism to the Egyptian GDP to reach 8.3 percent by the end of 2023 and continue to increase to reach 11 percent by 2028.

On the other hand, as travel and tourism increase, the hospitality industry is increasing too. The hospitality market experienced a state of remarkable growth as a result of tourism recovery in 2021 after the COVID-19 pandemic period, and many other growth factors include:

1. Developing the Egyptian infrastructure and increasing governmental support for the hospitality industry (AmCham Egypt 2022).
2. Expanding in the tourist attractions by opening many tourist destinations during 2021 and 2022, such as the Royal Carriages Museum in Cairo, the Sharm El Sheikh Museum, the National Museum of Egyptian Civilization, and the Kebash Road linking the Karnak and Luxor temples, in addition to

the opening of the Grand Egyptian Museum, which is expected to open in 2024 (AmCham Egypt 2022, RateGain 2023).

3. Lifting of travel restrictions worldwide, as well as lifting of flight restrictions to many Egyptian cities by several countries, such as the United Kingdom and Russia as a result of confidence and fading of concerns about Egypt's response to the COVID-19 pandemic, which has led to a significant increase of tourist arrivals to Egypt (AmCham Egypt 2022, RateGain 2023).

4. The interdependence among the Egyptian tourism types, such as health and wellness, medical, cultural, and recreational has led to catering to the multifaceted customer demands (Bathla et al. 2018, RateGain 2023).

5. The provision of new hotel products such as a homelike environment, spacious rooms, a fully equipped kitchen, free wireless connection, complimentary breakfast, on-site laundry service, etc., in addition to the expansion use of a better-communication, dot-com culture, e-marketing, social media networking, and low-priced airlines, that have led to satisfying customer new requirements and encouraging extended stays (Bathla et al. 2018, RateGain 2023).

For that reason, Egypt's hospitality market has seen considerable revenue growth. According to (Ghantous 2023) report in Hospitality News Middle East, in FY 2022, the Egyptian hospitality market achieved 116 USD per available room (RevPAR), versus 55 USD per available room (RevPAR) in the COVID-19 pandemic era in 2019. This growth in revenues has enabled the Egyptian hotel industry in 2021, according to Mordor Intelligence (2023) and RateGain (2023), to experience a robust growth rate of 45.5%, which allowed for a contribution rate of 5.1% to the Gross Domestic Product (GDP). Besides, the hotel industry is projected to increase at an estimated CAGR of 6% to 6.2% for the next five years as a result of increasing tourist visits to Egypt.

This robust growth rate, along with Egypt's government investment target that is projected to reach 7.4 billion US dollars in Egypt's tourism sector by 2027, has encouraged several investment groups and companies that seek great opportunities and look to hold a growing competitive key to invest in the Egyptian hospitality market (Mordor Intelligence 2023).

For that, the demand for trained workers who are well-educated, more knowledgeable, and multi-skilled has increased, which is expected to increase the number of employees required at an annual rate of 3 percent by 2026 to sustain the industry's growth (Bathla et al. 2018). Therefore, the availability of qualified employees is aggressively required in the hospitality industry.

Employability; Skills and Importance

Employability is defined by Yorke (2006) as "a set of achievements—skills, understandings, and personal attributes—that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community, and the economy" (p. 8). Yorke uses

the word achievement to point to a level of performance or competence needed for each component to create the potential needed to gain a job and ensure success in career lives. Matsouka and Mihail (2016) and Fajaryati et al. (2020) saw that employability skills comprise three components: knowledge gained as a result of academic qualifications, skills related to specification (whether hard or soft), and attitudes and personal characteristics.

Skills are of two types: hard and soft. The hard skills are those technical skills as professional knowledge, tools, or techniques that are needed to perform work tasks (Matsouka and Mihail 2016), while the soft skills are those "skills, abilities, and traits that are connected with personality, attitude, and behavior rather than to formal or technical knowledge" (Moss and Tilly 1996, p. 257) and can form individual behaviors and ways of responding to different challenges in work and life (Al-Mamun 2012). Soft skills comprise communication, collaboration, problem-solving, critical thinking ability, integrity, courtesy, responsibility, social skills, a positive attitude, professionalism, flexibility, teamwork, and work ethics (Fajaryati et al. 2020).

Pieces of literature have provided several skills commonly used in employability studies that can express the operators' perspective when recruiting entry-level employees. The skills are effective communication, self-management, problem-solving, leadership, teamwork, information technology (IT), creativity, interpersonal adaptability, critical thinking, social skills, positive attitude, professionalism, flexibility, negotiating, analytical thinking, decision-making, knowledge, research, hands-on experience, and work ethics (Espellita and Maravilla Jr, 2019, Osmani et al. 2015, Ramisetty and Desai 2017, Robles 2012).

On the other hand, Rowley et al. (2000) have divided the skills required for the hospitality industry into three categories: the industry-particular or vocational skills, which are primarily specialized abilities such as food service and preparation, inventory management, and cost control; the generic skills, which include managerial skills, communication, problem-solving, and sales skills; and the attitude-based competencies that are obtained from the workplace, such as enthusiasm, responsibility, and a willingness to learn. Possessing these skills is what can make hotel management graduates employable, ready to enter the world of work, capable of improving their abilities to attain suitable jobs, able to succeed in their occupation, and able to extend success at all stages of career levels (Adeyinka-Ojo 2018, Espellita and Maravilla Jr, 2019).

However, employability skills can be seen as those skills needed to make an individual flexible, adaptable, and mobile in the labor market (Kelly 2007). The importance of employability skills doesn't stop at just having the skills needed to be eligible for jobs; it is also used as a determinant of graduates' readiness for work and as an indicator of what they can do (Ramisetty and Desai 2017).

Employers' Preferences and Skill Gaps

The development of the hotel business and increased competition in the hotel market have led hotel operators to search for skilled graduates who can meet industry requirements. Hotel operators need innovative, effective, and resourceful

graduates with technical and generic competencies (Tyagi and Shah 2022). At the same time, they give great attention to soft skills and personal attributes over academic qualifications and technical skills (Finch et al. 2013, Saeed 2015, McMurray et al. 2016, Tyagi and Shah 2022), because soft skills provide graduates with the potential needed to make critical decisions, solve problems, and develop their competency and performance (Ramisetty and Desai 2017). For that reason, although possessing technical skills is important to do job tasks properly, these skills alone are not enough today to define graduates as employable and efficient in performing workplace tasks (Fajaryati et al. 2020, El Mansour and Dean 2016, James and James 2004, Menon et al. 2018, Robles 2012). The evidence was provided by Klaus (2010), who reported that about 75% of employees' success in the job is built on soft skills possessed, while about 25% of employees' success is dependent on their technical skills, which reflects the importance of soft skills for the workplace.

Unfortunately, hotel operators see that graduates do not have the necessary level of skills for the workplace environment (Abas-Mastura et al. 2013), which points to a significant gap between what skills academics teach students and what is needed by the industry (Bathla et al. 2019). These mismatches of skills may be a result of graduates' concentration on technical skills (El Mansour and Dean 2016) without realizing the importance of soft skills and what hotel operators need. Moreover, many scholars have seen that hotel management curricula are not preparing the students to be employable due to classroom teaching that does not meet the current industry requirements (Asirifi et al. 2014), which makes higher education be criticized for its inadequate preparation of students (Bathla et al. 2018).

Generally speaking, graduates will be less relevant to the industry when there are gaps between what they possess in terms of skills and what the industry requires, which makes them less attractive to the industry and vice versa (Tyagi and Shah 2022). Therefore, it is the responsibility of hospitality higher education to produce the most relevant graduates for the industry to achieve its purpose of preparing qualified people for the workplace.

Employability Skills Needed for Industry 4.0

Generally, technology is used to give an advantage and a "high touch" to hospitality establishments (Law et al. 2013), which need continuous updates to meet the guests' never-ending expectations and to maintain the establishment niche. As a response to Industry 4.0 technology, the hotel industry has started to change its skill requirements to meet the needs of new technology (World Economic Forum 2016). Industry 4.0 can be described as the adoption of advanced technology and intelligent systems in all aspects of hospitality services to produce the highest forms of digitalization and automation in a business environment, such as cyber-physical systems (CPS), the Internet of Things (IoT), big data, cloud computing, artificial intelligence, and robotics (Osei et al. 2020).

Although the hospitality industry always uses the most developed technologies, such as self-service technology, social media, and online booking websites, many

scholars have seen that these technologies are not enough and predict an era of "hospitality industry 4.0" (Osei et al. 2020). According to Bradley et al. (2015), looking forward to Industry 4.0 and its advanced technology is no longer a choice for the hospitality industry; it has become a commitment to being updated and leading the trends. In that, Beebe (1996, p. 46) had a long-distance vision to emphasize the readiness for the new digital era and stress that: "The digital world is here and now, and... employers... who [want] to stay prosperous must ride this information wave into the future on the skills of employees who can work the secrets of microchips, of computer software, of the Internet... and bring their creations into the marketplace."

Therefore, just possessing technical skills alone will not be enough for graduates to attain a job (Fajaryati et al. 2020), and there is a need to identify those new skills that can fulfill Industry 4.0 requirements (World Economic Forum 2016). For that, Rasul et al. (2013) introduced the BRICS recommendations (BRICS is a group of five great industrial countries comprising Brazil, Russia, India, China, and South Africa) to meet Industry 4.0 requirements. The BRICS had declared its concern about four skills that are described as critical for Industry 4.0: knowledge about ICT, the ability to work with data, technical know-how, and personal skills. In addition, a study was made by the Organization for Economic Co-operation and Development (OECD 2018) to determine the future of education and skills for 2030. It found three groups of skills are needed for 2030: cognitive and meta-cognitive skills (critical thinking, creative thinking, learning-to-learn, and self-regulation); social and emotional skills (empathy, self-efficacy, responsibility, and collaboration); and practical and physical skills (skills required to use and manipulate materials, tools, equipment, and artifacts, and ability to use and manage new information and communication technology devices).

However, according to many pieces of literature, the future skills needed from new-entry employees as basic employability skills will involve numeracy, solid literacy, information and communication technologies (ICT), autonomy, collaboration, coordination, creativity, teamwork, problem-solving, lifelong learning, managing complexity, complex information processing, abstraction, decision-making, critical thinking, independent problem solving, managerial, communication, and organizational skills (Bughin et al. 2018, Deming 2017, Grundke et al. 2017, SpA et al. 2020). In the same context, the World Economic Forum (2020) has discussed its vision of skills needed for Industry 4.0 based on expected changes in job tasks. The forum concluded that as jobs are changed, skills will also need to change to match the new jobs and tasks; otherwise, skill gaps will continue increasing. The forum suggested that the most important skills that are expected to prevail in the future labor market are critical thinking, analytical skills, problem-solving, and self-management skills (that comprise active learning, resilience, stress tolerance, and flexibility).

For that, and depending on the previously mentioned, it is expected that soft skills and technological skills will dominate hotel operators' choices of employability skills in Industry 4.0 (World Economic Forum 2018, Farjaryati et al. 2020).

Studies on the Gap between Higher Education and Hospitality Industry

In India, Bathla et al. (2019) conducted a study to explore gaps between hotel management education and hospitality industry expectations. The study has ended with the following results: Concerning hotel industry expectations, the study found that hotel operators expect graduates to have an adequate level of practical skills, technical skills, knowledge of hospitality products, software knowledge, customer service skills, marketing & sales skills, financial management knowledge, professional grooming standards, operational skills, and customer relationship management. On the other hand, concerning graduates' level of skills, the study found gaps in the following areas of skills to meet hotel operators' expectations: limited knowledge about the industry, less exposure to practical work, outdated equipment for conducting practical, inadequate software training, poor communication skills, lack of personal management skills, lack of hands-on practice workshops, an outdated curriculum, lack of customer relationship management, and a short period of internship skills.

In Egypt, Hossny (2018) conducted a study to explore the essential competencies expected and perceived by the Egyptian hotel industry among hospitality graduates. The study showed that there is a gap between hospitality managers' expectations and perceptions of graduates' employability in the hospitality industry. The study indicated that there are gaps that can be described as most negative, such as technical competency (in terms of knowledge and skills needed to perform the product or service), cultural awareness, communication skills, teamwork, strategic thinking, interpersonal skills, organizing, language skills, flexibility, and commitment. However, the lowest gaps they found were in work ethics, administrative skills, computer know-how, and enthusiasm. On the other hand, the results indicate that hotel operators require graduates who have more transferable competencies, generic competencies, professional competencies, analytical skills, and conceptual skills. Finally, the study indicated that hospitality graduates' competencies do not match the industry requirements, and technical competency represents the most critical gap in the hotel management curriculum.

Curriculum and Graduate's Employability

The hospitality industry is a labor-intensive industry that depends on people to deliver its services, which makes the educational curriculum a critical tool for the success of the industry (Kay and Russette 2000). Curriculum can be defined as "the course of study that a student undertakes to achieve a qualification" (Sellar et al. 2018, p. 36). The curriculum is about a set of subjects that constitute one program, which can be distributed over teaching time by giving each subject a specific number of hours (Mulenga 2018). The importance of curriculum comes from the fact that it involves all beliefs, values, skills, and knowledge that represent the outcome of the program (Mulenga 2018).

Nowadays, hospitality education has become essential for an individual who needs to get a job opportunity in the hotel industry (Bathla et al. 2019), because education plays a big role in equipping graduates with the employability skills and

competencies required by the industry to be qualified for hotel jobs and enhance their job opportunities (Tyagi and Shah 2022).

Therefore, insufficient skills from the perspective of industry or gaps in skills can be considered a matter of curriculum quality (Fajaryati et al. 2020), because unfulfillment of the industry requirement of skills will lead to employment problems.

Unfortunately, it was noticed that over 30% of the total hospitality workforce does not possess the basic capabilities and skills needed for the industry (Hossny 2018). Scholars have shown that hotel operators are suffering from a lack of graduates' soft skills (Dhaliwal and Misra 2020) because many hospitality institutions don't implant the required skills in the curriculum, which results in an unskilled and unemployable workforce (Dhaliwal and Misra 2020). Moreover, hotel operators believe that hotel management programs train students on basic skills only, while operators need them to be trained on critical thinking, analytical, interpersonal, marketing, and emotional intelligence skills (Bathla et al. 2019). For that, academics have to involve these skills in the program as an essential part of the curricula (Hind et al. 2007) to build graduates' employability. For example, in planning a curriculum to meet industry requirements of 20 subjects, the hard skills are preferred to not exceed 3 subjects, while the soft skills are 17 subjects (Rainsbury et al. 2002). The same was provided by Hodges and Burchell (2003), who stressed the importance of increasing the weight of soft skills in the curriculum to ensure the availability of competence needed for today's workplace.

Unfortunately, as a result of increasing competition and technology, the gap between curriculum and hospitality industry requirements is increasing gradually, which demands corrective actions to bridge this gap (Hossny 2018). The graduates' employability is no longer a choice for higher education; it has become a commitment (Fajaryati et al. 2020) and a serious matter that they can't run from. For that, the academic curriculum must equip graduates with employability skills to enhance their employability in the hospitality market (Bathla et al. 2018).

Research Methodology

The research aims to discover hotel operators' preferences for skills while recruiting entry-level employees, in addition to their perspectives on the skill gaps of higher education fresh graduates who are newly hired in the hotel within two years of their graduation.

The research will adopt the descriptive and quantitative methods using survey as a tool for research technique.

Research Instrument

The research instrument is a structured questionnaire was built on four studies: Matsouka and Mihail (2016), Abbasi et al. (2018), Kenayathulla et al. (2019), and Dhaliwal and Misra (2020), which are integrally used and removing repeated skills they produced a broad framework of employability skills comprise

38 skills. The skills, they are; oral and written communication, numeracy, leadership, communication skills, problem-solving, team-working, learning orientation, adaptability, creativity and innovation, ethics and integrity, initiative and enterprise, interpersonal skills, professionalism, technical skills, decision-making, time management, personnel management, customer service, planning and organizing, self-management, entrepreneurship, analytical skills, critical thinking, technology, extra effort, goal-setting, emotional intelligence, intrinsic motivation, self-awareness, influence and sales skills, change management, knowledge breadth, academic qualifications, global mindset, personal development, personal attitude, positive attitude, and information technology.

As the framework of skills is broad, therefore, it's important to divide it under a classification of skills to make it easy for respondents to distinguish the differences. For that, the researcher arranged the skills under Ramisetty and Desai's (2017) division of skills as categories, which comprise: (a) basic academic skills; (b) higher-order thinking skills; (c) interpersonal and teamwork skills; and (d) personal characteristics and attitudes, with a description for each skill to make it easy for respondents to provide accurate answers. However, the questionnaire is consisted of 38 skills within four categories of skill. Each skill is presented in the questionnaire with a description to make it easy for respondent to realize the meaning and to get accurate results. Respondents will be asked two questions: the first is to identify the minimum level needed for each skill as a criterion for their level of acceptance for recruitment to be evaluated on a five-point Likert scale, ranging from 1 (very low) to 5 (very high), and the second is to evaluate from their perspective the level of skills the newly hired graduates possessed on a five-point Likert scale ranging from 1 (very low) to 5 (very high).

Research Population

The study targeted hotels of the international chain, and focused on the entire population of 5-star hotels in Cairo. This population was determined to consist of 29 hotels according to the Egyptian Hotel Guide (2016), which was the only available source of documented data when the researchers commenced their field research in 2022. The research will include conducting a self-administrative questionnaire among five operational managers in each of the 29 hotels: front office, food and beverage, sales and marketing, housekeeping, and human resources, to generate a total sampling size of 145 managers.

Reliability and Validity

Before conducting the questionnaire, it's important to test the questionnaire's reality and validity. The researchers used a Cronbach's alpha test to ensure the respondents' consistency (when re-replying to the same question) and quality results. For that, the researcher conducted the questionnaire among ten operation managers in two different 5-star hotels, which were conducted with the same number of people after three weeks to check the questionnaire's reliability and validity. The Cronbach's alpha test yielded a reliability score 0.969, indicating high

questionnaire reliability. This allowed the researchers to conduct the questionnaire with the study population.

Table 1. *Cronbach's Alpha Test for Reliability and Validity*

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.969	80

Data Collection

The questionnaires were delivered personally to the directors of human resources at each of the targeted hotels. The director of human resources was responsible for ensuring that the questionnaires were administered to the rest of the managers in the hotel. 145 questionnaires were distributed, and collected back personally from each director of human resources and 135 (93%) completed questionnaire were returned in a valid condition for research purposes.

Data Analysis

SPSS version 25.0 was used to analyze the collected data. Responses for each skill and category were calculated using statistics and added to a table. The statistics analysis was used to show the sum, mean, and standard deviation for the two questions of the minimum required level of skills for hotel operators and their perspective of graduates' level of skills, in addition to analyzing the differences between them for each skill to verify the gaps and identify the biggest gaps, while using the ranking to verify the most preferred skills.

Results and Discussion

The results are as follows:

A. The basic academic skills category

Concerning the basic academic skills as shown in Table 2, the results showed significant differences between fresh graduates' abilities and hotel operators' requirements of skills that led to a skill gap of 8.74% to gain the job, where t = 10.940*, and p <0.001*, which means that the curriculum used in the higher education is not aligned with the industry requirements, especially in essential skills such as technical skills (16.01%), and numeracy (15.76%).

In addition, results showed that the most important basic academic skills by means for hotel operators are oral and written communication (3.64), followed by academic qualifications (3.35), and technical skills (3.31), which means that the hotel operators are interested in concentrating firstly in oral and written communications and technical skills, while their interest for the academic qualification because it is eligible to the job.

On the other hand, results showed that the lowest skills in hotel operators' assessments of graduates' abilities by mean are information technology (2.67), followed by both numeracy and technical skills (2.79), which means that there is a problem in the curriculum and students' preparation concerning the basic skills needed to fulfill the hotel industry requirements, which lead to a direct negative effect their employability.

B. The higher order thinking skills

Concerning the higher order thinking skills as shown in Table 2, the results showed significant differences between fresh graduates' abilities and hotel operators' requirements of skills that led to a skill gap of 11.44%, to gain the job where t = 12.071*, and p <0.001*, which means that the curriculum used in the higher education is not aligned with the industry requirements, especially in knowledge breadth (15.14%), technology (14.06%), planning and organizing skills (14.01%), and critical thinking (13.33%).

In addition, results showed that the most important higher-order thinking skills for hotel operators by mean are time management (3.35), followed by global mindset (3.19), planning and organizing skills (3.14), and technology (3.13), which means that the hotel operators are interested in those candidates who possess skills that enable well-planned and executed of tasks in a defined timetable besides, those skills that enable them to understand and respect people's differences while having the ability to use the latest technology.

On the other hand, results showed the lowest skills in hotel operators' assessment of graduates' abilities by mean are leadership (2.27), followed by entrepreneurial skills (2.30), change management (2.38), and analytical skills (2.39), which means the attention given to higher-order thinking skills in the curriculum and students' preparation for such skills is not enough to meet hotel operators' expectations that may negatively affect their employability.

Table 2. *Skill Gaps between Hotel Operators' Minimum Required Level of Skills, and Graduates' Level of Skills by Points in Total Sample (n = 135)*

No	Skills	Hotel minimum required level of skills					Graduates' level of skills					Gap (difference)	% Gap (difference)	t	p
		Sum	Mean	SD.	Rank	T. Rank	Sum	Mean	SD.	Rank	T. Rank				
	Basic academic skills	**2225**	**16.48**	**4.57**		**3**	**2030**	**15.04**	**4.58**		**3**	**1.44**	**8.74**	**10.940***	**<0.001***
1	Oral and written communication	491	3.64	1.23	1	8	476	3.53	1.28	1	7	0.11	3.02	4.093*	<0.001*
2	Numeracy	446	3.30	1.20	4	18	376	2.79	1.16	3	20	0.52	15.76	10.799*	<0.001*
3	Technical skills	447	3.31	0.99	3	16	376	2.79	0.93	3	20	0.53	16.01	9.657*	<0.001*
4	Information technology	389	2.88	1.37	5	30	361	2.67	1.26	5	26	0.21	7.29	5.451*	<0.001*
5	Academic qualifications	452	3.35	0.96	2	13	441	3.27	0.98	2	10	0.08	2.39	3.448*	0.001*
	Higher order thinking skills	**4708**	**34.87**	**9.51**		**4**	**4169**	**30.88**	**8.69**		**4**	**3.99**	**11.44**	**12.071***	**<0.001***
6	Knowledge breadth	383	2.84	1.05	7	33	325	2.41	0.93	8	34	0.43	15.14	9.243*	<0.001*
7	Planning and organizing skills	424	3.14	1.10	3	22	364	2.70	0.96	3	23	0.44	14.01	9.298*	<0.001*
8	Analytical skills	370	2.74	1.10	8	34	323	2.39	0.99	9	35	0.35	12.77	7.736*	<0.001*
9	Entrepreneurial skills	352	2.61	1.09	11	37	311	2.30	0.94	11	37	0.30	11.49	7.391*	<0.001*
10	Leadership	343	2.54	1.15	12	38	306	2.27	0.93	12	38	0.27	10.63	6.431*	<0.001*
11	Creativity and innovation	364	2.70	1.07	10	36	330	2.44	0.97	7	33	0.25	9.26	6.716*	<0.001*
12	Critical thinking	385	2.85	1.05	6	32	334	2.47	0.91	6	32	0.38	13.33	8.500*	<0.001*
13	Global mindset	430	3.19	1.15	2	20	402	2.98	1.17	2	15	0.21	6.58	5.672*	<0.001*
14	Time management	452	3.35	1.01	1	13	426	3.16	1.11	1	11	0.19	5.67	5.654*	<0.001*
15	Technology	423	3.13	1.21	4	23	363	2.69	0.97	5	25	0.44	14.06	8.511*	<0.001*
16	Change management	369	2.73	0.96	9	35	321	2.38	0.77	10	36	0.36	13.19	8.091*	<0.001*
17	Goal setting	413	3.06	1.21	5	26	364	2.70	1.13	3	23	0.36	11.76	7.105*	<0.001*
	Interpersonal and Teamwork Skills	**3688**	**27.32**	**6.42**		**2**	**3386**	**25.08**	**6.04**		**2**	**2.24**	**8.20**	**11.620***	**<0.001***
18	Communication skills	537	3.98	0.91	1	4	521	3.86	0.96	1	4	0.12	3.02	4.245*	<0.001*
19	Interpersonal skills	493	3.65	1.03	3	7	427	3.16	0.92	4	11	0.49	13.42	9.324*	<0.001*
20	Problem-solving	487	3.61	1.04	4	10	473	3.50	1.04	3	8	0.10	2.77	3.938*	<0.001*
21	Decision-making	388	2.87	0.99	8	31	342	2.53	0.91	8	31	0.34	11.85	8.061*	<0.001*
22	Team-working	502	3.72	0.89	2	6	483	3.58	0.99	2	6	0.14	3.76	4.685*	<0.001*
23	Emotional intelligence	426	3.16	1.01	6	21	380	2.81	1.02	6	19	0.34	10.76	7.217*	<0.001*
24	Influence and sales skills	447	3.31	1.21	5	16	410	3.04	1.21	5	14	0.27	8.16	5.913*	<0.001*
25	Personnel management	408	3.02	1.16	7	27	350	2.59	0.92	7	28	0.43	14.24	7.275*	<0.001*
	Personal Characteristics and Attitudes	**6174**	**45.73**	**6.97**		**1**	**5666**	**41.97**	**6.82**		**1**	**3.76**	**8.22**	**13.190***	**<0.001***
26	Personality development	454	3.36	0.97	7	12	426	3.16	0.95	6	11	0.21	6.25	5.922*	<0.001*
27	Extra effort	438	3.24	0.90	9	19	386	2.86	0.82	8	17	0.39	12.04	8.638*	<0.001*
28	Customer service	512	3.79	0.91	4	5	501	3.71	0.91	4	5	0.08	2.11	3.448*	0.001*
29	Intrinsic motivation	416	3.08	0.66	11	25	347	2.57	0.73	12	29	0.51	16.56	10.906*	<0.001*
30	Self-awareness	402	2.98	0.81	13	29	346	2.56	0.71	13	30	0.41	13.76	8.531*	<0.001*
31	Self-management	451	3.34	0.91	8	15	383	2.84	0.74	9	18	0.50	14.97	9.418*	<0.001*
32	Adaptability	489	3.62	0.93	5	9	444	3.29	0.90	5	9	0.33	9.12	6.918*	<0.001*
33	Positive attitude	565	4.19	0.88	3	3	555	4.11	0.85	3	3	0.07	1.67	3.274*	0.001*
34	Professionalism	457	3.39	0.75	6	11	394	2.92	0.87	7	16	0.47	13.86	8.738*	<0.001*
35	Ethics and integrity	581	4.30	0.78	2	2	570	4.22	0.76	2	2	0.08	1.86	3.448*	0.001
36	Initiative, and enterprise	405	3.0	0.93	12	28	360	2.67	0.80	11	26	0.33	11.00	6.759*	<0.001*

37	Learning orientation	418	3.10	0.65	10	24	373	2.76	0.74	10	22	0.33	10.65	7.689*	<0.001*
38	Personal attitude	586	4.34	0.79	1	1	581	4.30	0.83	1	1	0.04	0.92	2.270*	0.025*
	Overall	**16795**	**124.4**	**24.05**			**15251**	**113.0**	**23.34**			**11.44**	**9.20**	**14.666***	**<0.001***

SD: **Standard deviation**   **t: Paired t-test**   *: Statistically significant at $p \leq 0.05$
p: p value for comparison between the studied skills categories

C. The interpersonal and teamworking skills

Concerning the interpersonal and teamworking skills, as shown in Table (2), the results show significant differences between fresh graduates' abilities and hotel operators' requirements of skills that led to a skill gap of 8.20%, to gain the job, where t = 11.620*, and p <0.001*, which means that the curriculum used in the higher education is not aligned with the industry requirements, especially in personnel management (14.24%), interpersonal skills (13.42%), and decision making (11.85%).

In addition, results showed that the most important interpersonal and teamworking skills for hotel operators by mean are communication skills (3.98), followed by teamworking skills (3.72), interpersonal skills (3.65), and problem-solving skills (3.61), which means that the hotel operators are interested in candidates who possess skills that have a relation of dealing with people, as well as the capability to solve problems.

On the other hand, results showed that the lowest skills in hotel operators' assessment of graduates' abilities by mean are decision-making (2.53), followed by personnel management (2.59), emotional intelligence (2.81), and influence and sales skills (3.04), which means that there is a problem in the curriculum and students' preparation concerning the soft skills needed to do tasks efficiently, which obviously mismatched with hotel operators' requirements and affect negatively their employability.

D. The personal characteristics and attitudes

Concerning the personal characteristics and attitudes skills as shown in Table 2, the results show significant differences between fresh graduates' abilities and hotel operators' requirements of skills that led to a skill gap of 8.22%, to gain the job, where t = 13.190*, and p <0.001*, which means that the curriculum used in the higher education is not aligned with the industry requirements, which showed gaps, especially in intrinsic motivation (16.56%), self-management (14.97%), professionalism (13.86%), and self-awareness (13.76%).

In addition, the results showed that the most important personal characteristics and attitudes skills for hotel operators by mean are personal attitudes (4.34), followed by ethics and integrity (4.30), positive attitude (4.19), and customer service skills (3.79), which means that the hotel operators are interested in candidates who possess the proper attitudes that needed to be compatible with hospitality concept and hotel image, as well as the ability to provide an excellent customer service needed to generate good guests' experience.

On the other hand, results showed that the lowest skills in the hotel operators' assessment of graduates' abilities by mean are self-awareness

(2.56), followed by intrinsic motivation (2.57), initiative and enterprise (2.67), and learning orientation (2.76), which means that soft skills are dominating hotel operators' expectations of the skills needed. The results showed that there is a problem in the curriculum and students' preparation that obviously mismatched with hotel operators' requirements and affects negatively their employability.

Unfortunately, results revealed a significant difference in perspective between the hotel operators' requirements of skills, especially in response to Industry 4.0 (as seen in information technology, technology, and learning orientation), and the perspective of the academics of higher education concerning the minimum level of skills needed to make graduates ready for the workplace (as illustrated in Figure 1). Therefore, a lack of consistency in the curriculum used with industry requirements is noticeable, *which is the answer of research question (1)*, and confirm that Egyptian hospitality higher education deliverables are not aligned with the current requirements of the hotel industry, and much attention must be given to redesigning curricula in a way that can adjust the weight of skills to eliminate gaps and create alignment needed with hotel industry requirements.

It's obvious that according to Table 2 the skill gap percentage is from 1 to 16%, which may be considered not critical, but if we consider that the study aimed to evaluate the newly hired hotel employees the seen will be different. That's because if the accepted employees, who have to be the most qualified, have gaps in skills that reach 16%, the evaluation of the unaccepted may be a disaster. Therefore, gaps in fresh graduates' skills exist, and action should be taken.

In the same context, Table 2 illustrates the gaps that the hotel operators detected in newly hired graduates' skills, *which is the answer of research question (2).* The results revealed gaps in all skills, which is compatible with Ramisetty and Desai (2017) and Abbasi et al. (2018), who pointed out that according to several studies, significant gaps exist in fresh graduates' overall employability skills with hotel operators skill requirements, especially in leadership skills, communication skills (listening), interpersonal skills, negotiation skills (influence and sales skills), ability to supervise (personnel management), analytical skills, critical thinking, being creative or innovative, coordinating (planning and organizing skills), adaptability to change, problem-solving and conflict resolution, self-management, numeracy, and decision-making skills. In addition, the results revealed the importance of soft skills for graduates' employability, which affects their chances of getting proper jobs.

Figure 1. *Skill Gaps between Hotel Operators' Minimum Required Level of Skills, and Graduates' Level of Skills by Points in Total Sample (n = 135)*
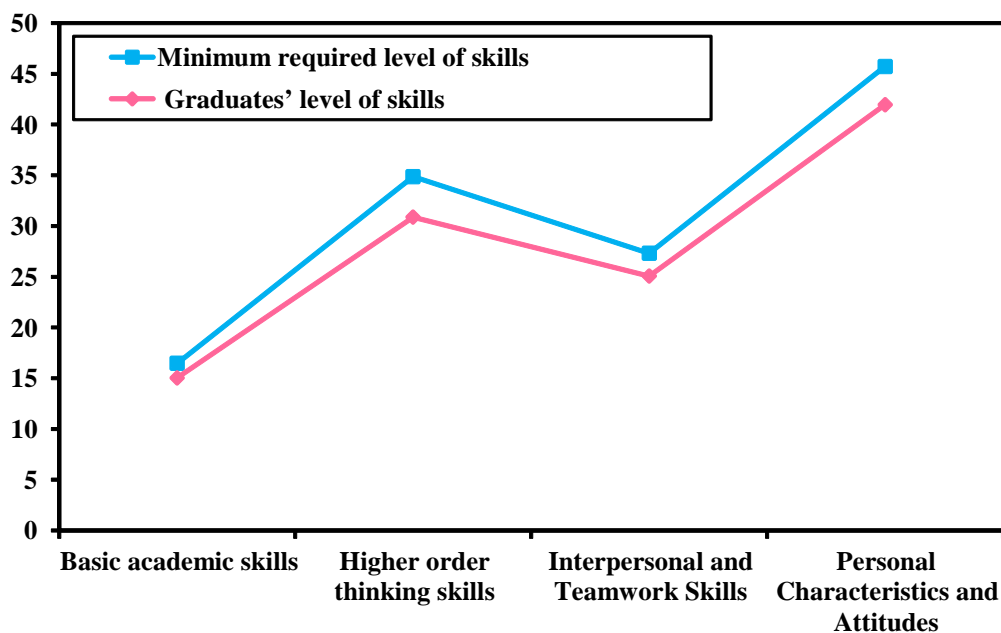
However, it's noticeable that hotel operators are increasingly looking for skills such as communication skills (mean = 3.98), and interpersonal skills (mean = 3.65), as provided by Finch et al. (2013), McMurray et al. (2016), and Abbasi et al. (2018), because they are necessary for interacting with guests, colleagues, and the public effectively.

Moreover, the study agreed with what was approved by Abbasi et al. (2018), who pointed to critical thinking (mean of 2.85), analytical skills (mean of 2.74), and creative thinking (mean = 2.70), as representing the least necessary skills for hotel operators when recruiting entry-level employees. The study is also compatible with Matsouka and Mihail (2016) in that there are many significant gaps in fresh graduates' skills such as professionalism (13.86%), goal setting (11.76%), emotional intelligence (10.76%), learning orientation (10.65%), and influence and sales skills (8.16%), but the study differs in graduates' ethics/ integrity (1.86%), which seems to have a small gap.

On the other hand, the skills analysis has enabled us to identify the most important ten skills that consider most for hotel operators, in addition to, the ten biggest gaps revealed in fresh graduates' abilities by mean (as shown in Table 3). These results have to be taken into account by academics to serve as a base and a guide when designing hotel management curricula. These results also have to be announced to light the way for fresh graduates when they decide to apply for hotel jobs.

Table 3. *The Most 10 Important Skills for Hotel Operators and the Most 10 Graduates' Skill Gaps in Total Sample (n = 135)*

Rank	No.	Skills	Mean	Rank	No.	Skills	% Gap (difference)
1	38	Personal attitude	4.34	1	29	Intrinsic motivation	16.56
2	35	Ethics and integrity	4.30	2	3	Technical skills	16.01
3	33	Positive attitude	4.19	3	2	Numeracy	15.76
4	18	Communication skills	3.98	4	6	Knowledge breadth	15.14
5	28	Customer service	3.79	5	31	Self-management	14.97
6	22	Team-working	3.72	6	25	Personnel management	14.24
7	19	Interpersonal skills	3.65	7	15	Technology	14.06
8	1	Oral and written communication	3.64	8	7	Planning and organizing skills	14.01
9	32	Adaptability	3.62	9	34	Professionalism	13.86
10	20	Problem-solving	3.61	10	30	Self-awareness	13.76

According to Table 3, hotel operators are considering most such skills as personal attitude, ethics and integrity, positive attitude, communication skills, and customer service, which are considered the basic requirements of skills for hotel operators when selecting entry-level employees, which is *an answer of research question (3)*. As seen in Table 3, it has been noticed that hotel operators are more concerned with attitude, contact skills, and soft skills than technical skills and academic qualifications. This result is compatible with a lot of literature (Dhaliwal and Misra 2020, Finch 2013, James and James 2004, MacMurray et al. 2016, Ramisetty and Desai 2017, Robles 2012, Saeed 2015), due to the nature of hotel work, which involves direct contact and interaction with hotel guests of various nationalities and cultures (Teng 2013), who are coming for leisure or on different occasions and under different circumstances. Unfortunately, academic qualification is recognized as of low importance in contrast with soft skills because it just makes graduates eligible for a job application (McMurray et al. 2016, Rehman and Mehmood 2014).

However, graduates of higher education are expected to be front-line employees. So, they have to be ready to deal with different sorts of communications, as well as have good teamwork skills to ensure effective cooperation and be able to transfer information effectively with all hotel staff. For that, Table 3 reveals the graduates' skill gaps that need to be revised in the curricula, such as intrinsic motivation, technical skills, numeracy, knowledge breadth, and self-management.

These results converge with the findings of Saepudin et al.'s (2022) study. They conducted a study at ITB University in Indonesia on 518 undergraduate students from 12 faculties to map the soft skills they required for recruitment based on job requirements, in addition to guaranteeing their development and success in their careers. The results showed that 74% of respondents emphasized that soft skills are very important for both personal and career development. At the same time, they ranked the skill priorities as follows: communication skills, self-management, and others, innovation and creativity, cooperation with others, judgment and decision making, emotional intelligence, knowledge and application of the field of science, smart acting, negotiation skills, and transdisciplinary thinking.

However, as the lack of skills in the curriculum leads to unemployment (Dhaliwal and Misra 2020), the good treatment of these skill gaps in the curriculum will lead to improving graduates' ability to do work tasks and consequently, enhance their employability, which is evidence of the curriculum's significant influence on graduates' employability.

On the other hand, the Spearman coefficient test was used to identify and interpret the strength level of the correlation among skills. The test is adopted on the highest four skills in rank for each category as a sample to understand whether there is a correlation among them or not and to allow academics to bring together all skills that have a strong correlation with each other in the same curriculum to benefit from their high correlation (as seen in Table 4). In addition, correlation tests will help academics realize and give the appropriate weight to skills when redesigning hospitality curricula to make sure that skill gaps disappear and never be seen again.

According to Table 4, Spearman coefficient tests have shown that there is a strong correlation between the following skills: oral and written communication and numeracy; planning and organizing skills and technology; time management and technology; communication skills and interpersonal skills; communication skills and problem-solving; interpersonal skills and problem-solving; customer service and positive attitude; and positive attitude and personal attitude. These results are significant for the quality of hotel education deliverables by guaranteeing the achievement of the requirements for Industry 4.0 and enhancing graduates' employability.

Table 4. *Correlation between the Different Skills in Total Sample (n = 135)*

No.	Correlations	r_s	p	Interpretation
	Basic academic skills			
1 vs. 2	Oral and written communication vs. Numeracy	0.679*	<0.001*	Strong Correlation
1 vs. 3	Oral and written communication vs. Technical skills	0.416*	<0.001*	Moderate Correlation
1 vs. 5	Oral and written communication vs. Academic qualifications	0.516*	<0.001*	Moderate Correlation
2 vs. 3	Numeracy vs. Technical skills	0.387*	<0.001*	Weak Correlation
2 vs. 5	Numeracy vs. Academic qualifications	0.584*	<0.001*	Moderate Correlation
3 vs. 5	Technical skills vs. Academic qualifications	0.311*	<0.001*	Weak Correlation
	Higher order thinking skills			
7 vs. 13	Planning and organizing skills vs. Global mindset	0.406*	<0.001*	Moderate Correlation
7 vs. 14	Planning and organizing skills vs. Time management	0.502*	<0.001*	Moderate Correlation
7 vs. 15	Planning and organizing skills vs. Technology	0.643*	<0.001*	Strong Correlation
13 vs. 14	Global mindset vs. Time management	0.432*	<0.001*	Moderate Correlation
13 vs. 15	Global mindset vs. Technology	0.435*	<0.001*	Moderate Correlation
14 vs. 15	Time management vs. Technology	0.680*	<0.001*	Strong Correlation
	Interpersonal and Teamwork Skills			
18 Vs. 19	Communication skills vs. Interpersonal skills	0.754*	<0.001*	Strong Correlation
18 Vs. 20	Communication skills vs. Problem-solving	0.648*	<0.001*	Strong Correlation
18 Vs. 22	Communication skills vs. Team-working	0.567*	<0.001*	Moderate Correlation
19 vs. 20	Interpersonal skills vs. Problem-solving	0.660*	<0.001*	Strong Correlation
19 vs. 22	Interpersonal skills vs. Team-working	0.576*	<0.001*	Moderate Correlation
20 vs. 22	Problem-solving vs. Team-working	0.578*	<0.001*	Moderate Correlation
	Personal Characteristics and Attitudes			
28 vs. 33	Customer service vs. Positive attitude	0.641*	<0.001*	Strong Correlation
28 vs. 35	Customer service vs. Ethics and integrity	0.444*	<0.001*	Moderate Correlation
28 vs. 38	Customer service vs. Personal attitude	0.599*	<0.001*	Moderate Correlation
33 vs. 35	Positive attitude vs. Ethics and integrity	0.370*	<0.001*	Weak Correlation
33 vs. 38	Positive attitude vs. Personal attitude	0.789*	<0.001*	Strong Correlation
35 vs. 38	Ethics and integrity vs. Personal attitude	0.508*	<0.001*	Moderate Correlation

r_s: Spearman coefficient   *: Statistically significant at $p \le 0.05$

Finally, we can summarize the skill categories' ranking by their importance for hotel operators, as shown in Table 5. The hospitality concept as a nature of hotel work is playing an essential role in the hotel operators' priorities as it depends on human interaction, which is dominating their priorities of skill categories required and proves the importance of soft skills for hotel business (Hodges and Burchell 2003, Klaus 2010, Robles 2012, El Mansour and Dean 2016, Matsouka and Mihail 2016, Ramisetty and Desai 2017, Menon et al. 2018, World Economic Forum 2018, Fajaryati et al. 2020).

Table 5. *Ranking Skills Categories based on the mean Percentage of Hotel Operators' Minimum Requirements (the Mean to Maximum Score) in Total Sample (n = 135)*

SKILLS CATEGORY	Skills categories minimum requirements		
	Mean	%	Rank
Basic academic skills	16.48	65.92	3
High order thinking skills	34.87	58.12	4
Interpersonal and teamwork	27.32	68.30	2
Personal attributes	45.73	70.35	1
Overall	**124.4**	**65.47**	

The results showed that employee behavior is a major concern for hotel operators. For that reason, personal characteristics and attitudes are placed in the first-ranking from the hotel operators' perspective when selecting fresh graduates for recruiting, followed by interpersonal and teamwork skills in the second-ranking as important for human interaction and work performance. In the third-ranking, the basic academic skills are placed to set the criteria and define the minimum potential abilities and understanding expected from candidates. Finally, in the fourth-ranking, the higher-order thinking skills category is coming to enable operators to differentiate among the candidates by expecting their behavior and potential to achieve hotel policies and targets. Although higher-order thinking skills are very important for the hotel business, they placed fourth due to the research aim of targeting fresh graduates who will occupy entry-level jobs, and the researcher believed that this ranking would change upward in the higher levels of job occupations.

On the other hand, when testing the correlation among the skill categories themselves, the results showed that there are significant correlations among all skill categories (as shown in Table 6). These results mean that these four categories of skills represent the pillars on which hotel service processes stand. Therefore, they are all important for the hospitality industry, and any absence of one or more of these categories may reflect badly on the industry.

Unfortunately, regarding research results, fresh graduates do not have the necessary level of employability skills to be employed up to the hotel industry requirements (Singh and Singh 2008, Mourshed et al. 2012, Abas-Mastura et al. 2013, Kanter 2013, Jackson 2015, Matsouka and Mihail 2016, McDermott and Ortiz 2017, Dhaliwal and Misra 2020, Fajaryati et al. 2020, Manpower 2023).

Table 6. *Correlation between the Different Skill Categories, based on the Minimum Level of Skills Required by the Mean in the Total Sample (n = 135)*

		Basic academic skills	Higher order thinking skills	Interpersonal and Teamwork Skills	Personal Characteristics and Attitudes	Overall
Basic academic skills	r	1.000	0.779*	0.582*	0.411*	0.773*
	p		<0.001*	<0.001*	<0.001*	<0.001*
Higher order thinking skills	r		1.000	0.788*	0.645*	0.941*
	p			<0.001*	<0.001*	<0.001*
Interpersonal and Teamwork Skills	r			1.000	0.753*	0.907*
	p				<0.001*	<0.001*
Personal Characteristics and Attitudes	r				1.000	0.824*
	p					<0.001*
Overall	r					1.000
	p					

r: Pearson coefficient   *: Statistically significant at $p \leq 0.05$

This state indicates that hotel management graduates' skills are mismatched with industry requirements (Tyagi and Shah 2022), which may lead to a serious problem in their employment and reflect on the hotel industry's business within the next few years.

The reason is that the higher education curricula are inadequate in equipping students with the desired skills needed to fulfill the industry requirements (El Mansour and Dean 2016, Ramisetty and Desai 2017, Abbasi et al. 2018).

In the same context, stakeholders have pointed out their concerns about management education in terms of teaching and learning outcomes (Jackson, 2015), which need to be revised and reconstructed in hotel management curricula according to hotel operators' perspectives and requirements (Baum 2006, Espellita and Maravilla Jr 2019, Hind et al. 2007, Hodges and Burchell 2003, Rainsbury et al. 2002).

Concerning students, they have to understand that the economic challenges will make it hard for fresh graduates to get the opportunity for a suitable job without possessing the adequate soft skills needed because hotel operators are looking for success, which requires hiring graduates who have the potential to add value to the hotel business (Ejiwale 2014). Therefore, students have to improve their skills to attain goals by exerting more effort in learning skills that are valuable for their potential job and realizing that in today's world, to be successful, they have to be flexible and creative. In the same context, Freeman (2013) described the new world's requirement of skills as rewarding diversity achieved by the difference in abilities through possessing soft skills and personality traits that are not taught in higher education without neglecting the value of hard skills.

However, to bridge the gap between higher education and the hospitality industry, students have to be aware of the industry's needs, and academics need to be precisely aware of the skills the industry needs to modify the curricula that can prepare qualified students for the workplace, cater to industry requirements, and present the graduates' competency (Sharma and Sharma 2019, Spowart 2011).

For that, the essential aim of hospitality higher education is to provide the industry with high-caliber graduates who are outfitted with relevant capabilities (Tyagi and Shah 2022). Therefore, it is the responsibility of the higher educational institute to revise its curricula and develop them in a way that fulfills the requirements of the hospitality industry. Consequently, the understanding of study results is vital to achieving the best design of hotel curricula that can meet hotel and Industry 4.0 requirements, develop hotel industry services, and enhance graduates' employability.

Recommendations

According to the World Bank (2015), the unalignment between industry and education has become a universal phenomenon that may create critical issues. For example, surveys have shown that within 24 countries in Europe, from 25% to 45% of the employees are either overqualified or underqualified for jobs, which points to the inadequacy of qualified employees to fill occupations, which will lead to bringing employees from outside the border. On the other hand, the surveys also showed that in developing countries that have service-based economies, such as Egypt, many highly educated people are unemployed, due to employers finding them lacking a variety of skills and competencies needed more than technical skills, so they are unemployed as a result of not having what the labor market needs.

For that, the researcher has provided a group of recommendations that can serve as solutions to the research problem:

1. Collaboration between the hotel industry and higher education is a necessity in curriculum design to close existing gaps in the perspective between employers and educators, equip students with current skills needed to improve their competencies that can fulfill industry requirements, and ensure better job opportunities for graduates (Adeyinka-Ojo 2018, Espellita and Maravilla Jr 2019, Matsouka and Mihail 2016, Ramisetty and Desai 2017).
2. Establish a close partnership between academics and industry players so that educators can stay updated with industry transformation, and students can understand industry expectations (Bathla et al. 2019).
3. The weighting of technology and information technology skills in the curriculum has to increase to match the new market requirements level of skills for Industry 4.0.
4. Soft skills and personal attitudes have to be focal points in curricula as they are considered a basis for hotel employability skills when graduates apply for new-entry jobs (Abbasi et al. 2018, Dhaliwal and Misra 2020, El Mansour and Dean 2016, Fajaryati et al. 2020, Kenayathulla et al. 2019, Matsouka and Mihail 2016, McMurray et al. 2016, Menon et al. 2018, Robles 2012).
5. Establishing a quality unit to be concerned with evaluating graduates' competence based on the hotel's minimum level of requirements for skills

that are needed to ensure graduates' recruitment, which is compatible with Kanter's (2013), and World Bank Group's (2015).

6. Concentrate on curriculum design on teaching thinking and analytical skills, rather than teaching specific skills, because learning how to learn is better than applying common solutions (Doncaster 2000, Ramisetty and Desai 2017).

7. Attention should be given to the methods of learning used that can build personality, which, if inadequate, will result in unready graduates for the workplace nowadays, as pointed out by El Mansour and Dean (2016) and Abbasi et al. (2018).

8. Built students' awareness of the range of skills that are needed to remain competitive in the labor market (Espellita and Maravilla Jr 2019)

In the end, a hospitality career is not easy, and students have to realize that without soft skills, it will be hard to be accepted for a good job in the hospitality labor market.

Practical Implications

The study is expected to lead for the following implications:

1. Identifying the gaps in skills that hotel operators are complaining about when recruiting entry-level employees, will help academics develop hotel management curricula.

2. Helping academics recognize the skills that matter most to hotel operators when recruiting new entry-level employees.

3. Orienting the education strategy to re-set the curriculum outcomes to align with the criteria of the industry inputs.

4. Assisting hotel management graduates in becoming aware of the industry requirements for skills that will positively reflect on their employment rate.

5. Helping the collaboration between higher education and the hospitality industry because the output of education is the input of the industry.

Conclusion

The research attempted to discover the recent employability skills needed by hotel operators that form the current and future requirements of the hospitality industry as a response to the new digital era of Industry 4.0. The research asked the hotel operators about the level of skills that represent their minimum skill requirements for recruiting and also their assessment of the level of skills possessed by newly hired graduates to make a comparison and discover graduates' skill gaps. The results were:

1. There are gaps revealed in all skills between what hotel operators want and need as minimum requirements for recruiting, and the real level of skills that the newly hired graduates are possessed.
2. The research revealed that higher education curricula are inadequate to equip students with the skills needed to fulfill hotel requirements, so, they need to be revised and developed up to industry expectations.
3. The research revealed that hotel operators are concerned most with soft skills and personal attitudes which are considered as a basis for their choice of employability skills, without neglecting the importance of technical skills.
4. The research identified the top 10 skill gaps in fresh graduates' abilities and the top 10 significant skills that hotel operators' value most, which may help academics when redesigning hotel curricula.
5. The researcher provided some recommendations that may help to improve graduates' employability and hotel industry services.

Limitations of the Research

The research is tied to the following limitations:

1. The research targets 5-star hotels, neglecting 4-star and other lower levels of hotels because they represent the graduates' level of studies at the hotel higher education institutions.
2. The research targeted 5-star hotels in Cairo only, because it has the greatest number of 5-star hotels and the biggest hotels in terms of room capacity in comparison to other cities. Moreover, Cairo represents the first choice for hotel higher education graduates who require attaining the proper and sufficient experience needed before transient with career promotion in destination areas.
3. The research targeted only five department managers, i.e., front office, food and beverage, sales and marketing, housekeeping, and human resources, because they represent the graduates' study subjects and their desired departments for employment.
4. The research is oriented toward fresh graduates—who were newly hired at the hotels within the past two years in entry-level hotel jobs.
5. The research studied one hotel for each hotel chain unless if they are different in hotel type (downtown and resort).

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