

Innovation Skills Assessment and Variation among Healthcare Employees in the Emergency Department: A Cross-sectional Study

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Abstract

Aim: Innovation is vital in emergency departments (EDs), advancing diagnostics, triage, communication, and personalized treatment to save lives and improve patient outcomes. This study aims to assess the self-perceived innovation capacities of employees in the ED of a major quaternary care hospital in Karachi, Pakistan, to establish a baseline and identify areas for improvement.

Materials and Methods: This study employed a descriptive cross-sectional design to assess the innovation skills of employees in the Department of Emergency Medicine and the 24/7 Emergency and Acute Care Service Line at the Aga Khan University Hospital in Karachi, Pakistan. The sample size of 130 employees was determined using non-probability purposive sampling. The study used the Innovation Skills Assessment, a close-ended structured questionnaire, to measure employees' self-perceived strengths and weaknesses in the four pillars of innovation skills. Descriptive statistics and visualizations were used for data analysis. Ethical approval and informed consent were obtained beforehand.

Results: The study showed that employees generally had a positive self-assessment of their innovation skills. There were differences between genders, with males scoring slightly higher. Young employees did not perceive themselves as more innovative, whereas older employees scored lower. Postgraduates and nurses self-assessed higher innovation capacities. Overall, employees showed strengths in idea generation and relationship building but had room for improvement in risk-taking and entrepreneurship.

Conclusion: This study emphasizes the importance of fostering innovation in EDs in low-resource settings to improve patient outcomes. These findings can inform targeted interventions to enhance innovation skills and promote a culture of innovation and entrepreneurship in EDs globally, and in healthcare organizations overall. Further research is needed to explore the relationship between self-assessed and actual innovation performance.

Keywords: Innovation, creativity, entrepreneurship, low and middle income, healthcare delivery, emergency department



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Introduction

Innovation is a critical driver of progress and growth in organizations across various sectors, and the healthcare industry is no exception (1). The ability to innovate allows organizations to develop creative solutions, improve processes, and deliver better outcomes for patients and healthcare systems. Understanding the innovation skills and capacities of employees is essential for fostering a culture of innovation within healthcare organizations (2).

Emergency departments (EDs) play a pivotal role in healthcare delivery, serving as critical entry points for patients in need of immediate medical attention (3). However, globally, EDs face significant limitations that hinder their ability to provide timely and effective care. Overcrowding, resource constraints, and complex patient needs are pervasive challenges, particularly in low- and middle-income countries (LMICs) (4). The convergence of these constraints creates a compelling case for innovation, ideation, and discovery in the ED setting.

In LMICs, where healthcare systems often operate under constrained resources and face unique challenges, fostering a culture of innovation in EDs is imperative. Innovative solutions in these settings can address ED overcrowding by streamlining patient flow, optimizing triage processes, and implementing novel strategies to manage patient surges (5). Additionally, efficiency-driven innovations can help reduce patient wait times, enhance staff communication, and maximize the use of available resources. Creative approaches to patient care and resource management can lead to improved patient outcomes, increased patient satisfaction, and a more resilient and responsive healthcare system (6).

Innovation Skills Assessment (ISA) holds great importance at various levels, including the global, national, and local levels. At the global level, fostering innovation skills is essential for maintaining competitiveness in the global marketplace and driving advancements in healthcare (7). Nationally, ISA can inform policies and strategies aimed at promoting innovation within the healthcare sector, leading to improved healthcare services and outcomes (8). Understanding the innovation skills of employees in specific healthcare settings is crucial for tailoring interventions and initiatives to foster a culture of innovation at the grassroots level (9).

Furthermore, EDs in LMICs frequently develop creative and adaptive practices out of necessity, given the resource constraints and complex patient needs they encounter (10,11). These innovative approaches can inspire and inform ED practices in high-income countries (HICs), where innovation can sometimes

be hindered by established processes and a reluctance to deviate from traditional approaches. Thus, the ED setting in LMICs could serve as a model for innovation that applies to EDs in HICs (12,13).

To effectively foster a culture of innovation in EDs, it is crucial to assess and understand the innovation skills and capacities of employees. Such assessments provide insights into employees' strengths and areas for improvement, enabling organizations to design targeted training and development programs to enhance their innovation skills (14). In this regard, tools such as the ISA have been developed to measure various dimensions of innovation skills, such as idea generation, risk-taking behavior, relationship development, and the ability to transform ideas into tangible outcomes (12).

The rationale for conducting an ISA in the ED, Aga Khan University Hospital (AKUH), Karachi, Pakistan, lies in the unique challenges and opportunities posed by low-middle-income healthcare settings. EDs serve as critical gateways to healthcare services, and their efficient functioning is essential for providing timely and effective care to patients in need of immediate medical attention (15).

This study aimed to assess the self-perceived innovation capacities of employees and staff of the Department of Emergency Medicine (DEM) and Acute Care Service Line, AKUH, Karachi, Pakistan. Understanding and enhancing healthcare innovation is increasingly important for delivering high-quality care to patients. Innovation within the ED can lead to improved patient outcomes, more efficient processes, and a better overall healthcare experience. Therefore, we sought to evaluate employees' and staff's abilities in innovative idea generation, risk-taking behavior, relationship development, and the process of pivoting from idea to product. By using the ISA tool, this study sought to obtain valuable insights into the self-perceived innovation skills of employees and identify areas for improvement within the ED of the healthcare setting in Pakistan.

Materials and Methods

Study Design

The study design was a descriptive cross-sectional study. The study population included all employees and staff of the DEM and the 24/7 Emergency and Acute Care Service Line at AKUH, Karachi, Pakistan. The department unites specialties for seamless, holistic care, ensuring effective treatment under one roof for various emergencies. It is 65-bedded in different sections, including but not limited to adult, pediatrics, chest pain unit, observation unit, etc. that collectively cater to close to a hundred thousand patients annually (16).

Sampling Strategy

The study employed non-probability purposive sampling. OpenEpi, version 3, an open-source calculator, was used for sample size calculation. The total number of employees affiliated with the ED, AKUH is 1000 (N): 1000, innovation knowledge and attitude in the population from previous studies (p): 8%+/-5, confidence limits as percentage of 100 (absolute +/- %) (d): 5%, confidence level (%): 95%. The total calculated sample size is 130.

Selection criteria: Inclusion: All employees and staff working and training in the DEM and 24/7 Emergency and Acute Care Service Line at the AKUH. Exclusion: Employees who joined less than 6 months before conducting the study or those who had previously been trained in entrepreneurship and innovation for the organization.

Study site: The study was conducted in the DEM and 24/7 Emergency and Acute Care Service Line at AKUH, Karachi, Pakistan.

Study duration: Our study was conducted for 6 months with data collection conducted as part of the hospital innovation assessment completed over a week in 2021.

Study tool: The ISA tool uses a novel structured questionnaire with closed-ended questions. The ISA was derived from the General Innovation Skills Aptitude Test (GISAT 2.0), which helps organizations assess their innovation skills capacities against their innovation skills needs (17,18). ISA was validated at the ED, AKUH (12,19). The tool assesses individuals, teams, and organizational units across four categories of skills, attitudes, and behaviors that contribute to the capacity to innovate. Critical Creative Innovative Thinking (CCIT) is a platform for developing innovation and entrepreneurship. CCIT has been involved in developing innovation implementation frameworks in the context of LMICs, namely hackathons and innovation fellowships. CCIT is based at AKUH, one of the preeminent healthcare universities in the South Asian region. AKU has set benchmarks and become an industry leader in healthcare service delivery over the years.

The ISA tool comprises four pillars. Pillar 1 focuses on generating ideas and has subcomponents of creativity, problem-solving, and continuous improvement skills. Pillar 2 focuses on calculated risks and being entrepreneurial and has sub-components of risk assessment and risk-taking skills. Pillar 3 focuses on developing and maintaining interpersonal relationships and has subcomponents of relationship-building and communication skills. Pillar 4 focuses on turning ideas into products, processes, services, and implementation skills.

The ISA uses a survey instrument that invites participants to conduct a self-assessment of their perceived strengths and

weaknesses across a range of indicators that measure their abilities to act and contribute as well as to manage others in each of these skill categories (Appendix 1). For this study, we only used the self-assessment aspect of the ISA. The survey also captures a range of demographic information about participants, enabling a breadth of analysis of results.

The ISA was developed to provide an understanding of how innovation skills are embodied and used in the pursuit of an organization's operational goals. The ISA helps businesses and individuals better match their innovation skills capacity with their innovation demands by identifying and analyzing the innovation skills found in individuals.

Participants completed the survey instrument individually. For each of the 69 measures in the survey, participants were asked to rank on a five-point scale: (1) the degree to which they feel they demonstrate the described skill, attitude, or behavior; and (2) the degree to which they feel the same skill, attitude, or behavior is important to their job. An assessment of "1" is considered low and an assessment of "5" is considered high.

Ethical Approval

Ethical approval was obtained from the Ethics Review Committee of Aga Khan University (approval no: 2022-1037-21623, date: 23.05.2022). Informed consent was obtained from the study participants. All personal identifiers were anonymized.

Statistical Analysis

Descriptive statistics, including frequencies and percentages, were calculated for categorical variables, whereas the mean and standard deviation were reported for continuous variables. Bar charts were developed for data visualization of categorical variables. Each pillar had scores calculated on a Likert scale of 1 to 5. The score was stratified on the basis of the lowest innovation score (score of 1) to the highest innovation score (score of 5).

Results

One hundred and thirty surveys (approximately 52% coverage) were completed by the employees and staff of the DEM and the 24/7 Emergency and Acute Care Service Line of the AKUH, Karachi, Pakistan. This included a heavier distribution of male employees (57.1%) than female employees (42.9%). Predominantly young employees under the age of 35, although approximately 29% of participants were older than 35. There was a balanced distribution of employees by education level and length of employment in the department. There was a relatively high average assessment of their skills, and there was not a huge difference in self-assessment. Few participants ranked themselves as having a low level of innovation skills, as shown in Table 1.

Table 1. Self-assessment mean score of healthcare employees in the emergency department					
Mean score self-assessment (out of 5)					
Frequency	Percent	Pillar 1: Generating ideas	Pillar 2: Taking calculated risks and being entrepreneurial	Pillar 3: Developing and maintaining interpersonal relationships	Pillar 4: Turning ideas into products, processes and services
130	100	3.9	3.7	4.0	3.9

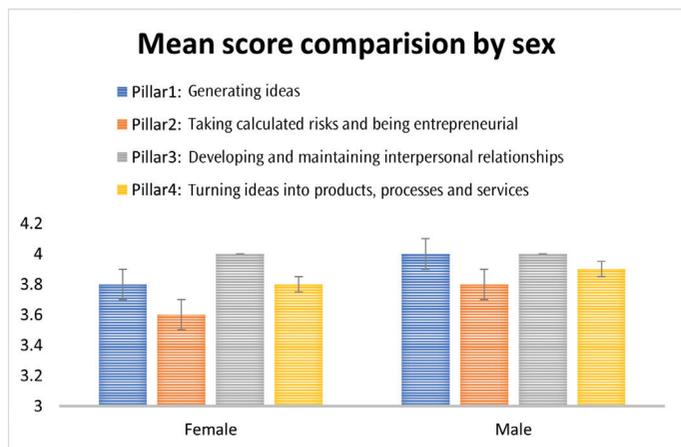


Figure 1. This figure shows the mean scores of self-assessed innovation skills by gender

The results from the mean comparison of skills assessment by gender (Figure 1) suggested that although males generally scored themselves higher across the three categories of innovations skills, the difference between the two genders was not substantially different. Both male and female employees scored lowest on their abilities to take calculated risks and being entrepreneurial.

For skills assessment stratified by age (Figure 2), employees under 25 years of age did not perceive themselves to be more innovative than their colleagues in other age groups. Employees aged 45-55 scored themselves higher than most of their younger colleagues on pillars 1 and 3. However, they self-assessed being less entrepreneurial. Employees aged 55 years or above scored significantly lower on almost all innovation parameters than their younger colleagues.

Stratifying by the level of education (Figure 3), we found that postgraduates self-reported the highest levels of relationship-building and communication skills. Scores in Pillar 4 increased steadily by individuals at each higher level of education. Employees having completed intermediate education or less self-assessed 3 of the 4 pillars for innovation skills to be comparable or sometimes higher than their more highly educated colleagues. Employees with an undergraduate degree reported the lowest innovation self-assessment scores compared with the other groups.

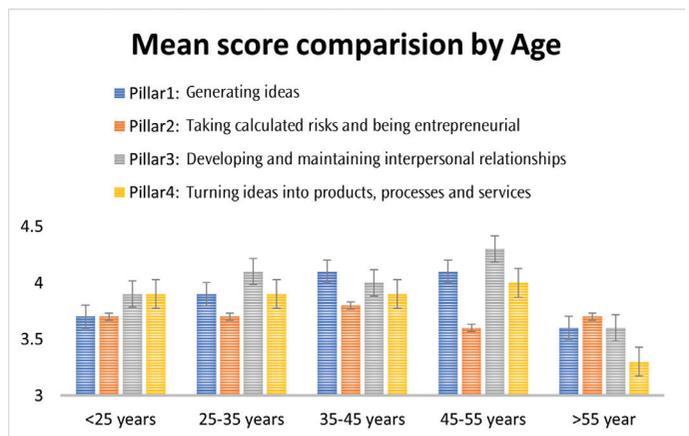


Figure 2. This figure stratifies employees by age and illustrates their self-perceived innovation skills

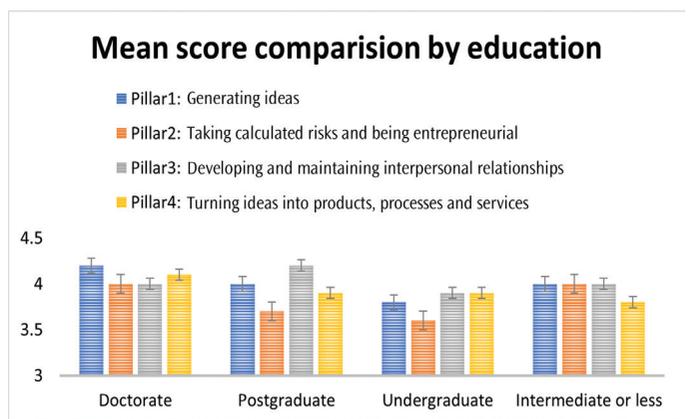


Figure 3. This figure provides insights into self-reported innovation skills based on the respondent's level of education

Stratifying per employee service length (Figure 4), revealed that staff members with less than one year of service experience did not perceive themselves to be more innovative than their colleagues having longer service. Employees with more than ten years of service reported strong skills in creativity, problem-solving, and risk assessment. However, they were less confident about their relationship management skills.

Stratifying per professional cadre (Figure 5) revealed that nurses self-assessed their innovation capacities higher than doctors and other professionals across all pillars of the ISA. Doctors were found

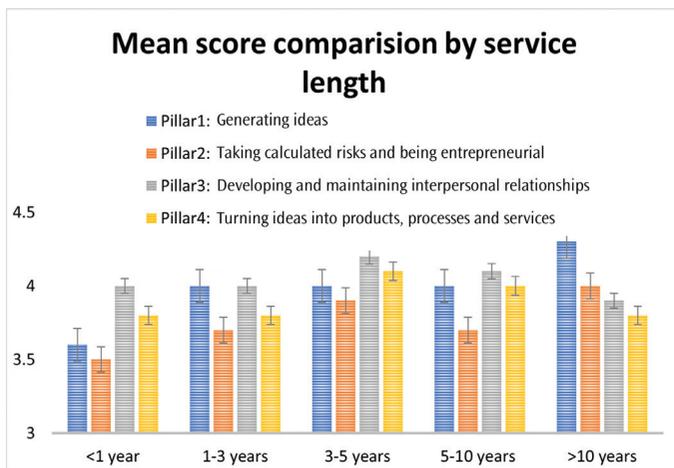


Figure 4. This figure categorizes employees based on their service length and reveals their self-perceived innovation skills

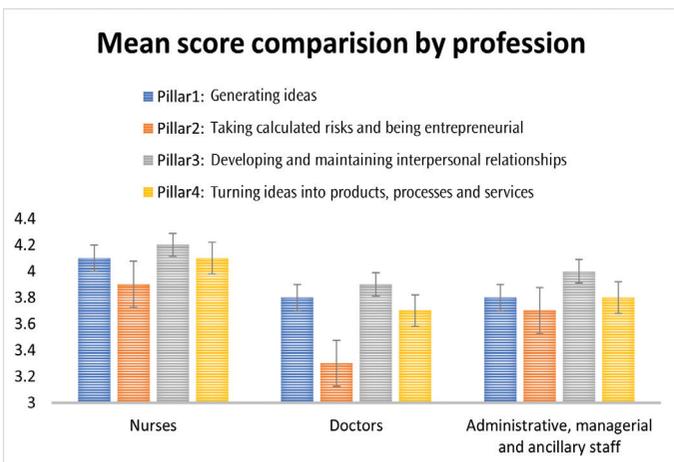


Figure 5. This figure highlights differences in self-assessed innovation capacities among various professional cadres

to be considerably low in their pillar 2 skills (taking calculated risks and being entrepreneurial) while also self-ranking lower in other pillars compared with nurses, administrative, managerial, and ancillary staff.

Discussion

The ED is a dynamic and high-pressure environment that requires “smart” approaches for efficient patient care while maintaining utmost safety. ED throughput demands quick thinking, faster decision-making, and streamlined processes to handle the constant influx of patients with diverse and often critical medical needs (20). The ISA tool is crucial for understanding the mindsets of various cadres within the ED and assessing their innovation capacities. Employees of the ED, AKUH, Karachi, Pakistan, were found to have relatively high self-assessment of their innovation, creativity, and entrepreneurship skills (21).

The analysis of self-assessed innovation skills by gender indicated that male employees generally scored higher across the three categories of innovation skills. However, the difference between the genders was not substantially different. Both male and female employees rated themselves lowest in their abilities to take calculated risks and being entrepreneurial. These findings suggest the need for targeted interventions and training programs to encourage risk-taking and foster an entrepreneurial mindset among employees of both genders (22,23).

Interestingly, younger employees (under 25 years old) did not perceive themselves to be more innovative than their peers in other age groups, contrasting expectations. Employees aged 45-55 self-assessed higher on idea generation and relationship development skills than their younger colleagues but scored lower on being entrepreneurial. Employees aged 55 or above scored significantly lower on almost all innovation parameters compared with their younger counterparts. They have a wealth of experience and know-how. However, when it comes to being entrepreneurial and taking bold risks, they are not as confident. This could be because they have more financial responsibilities, such as mortgages and family expenses, making them less inclined to take risks that could jeopardize their stability. It might also be because the organizations in which they work may not encourage or reward entrepreneurial behavior. Older employees have experience and relationship skills, but they might need a nudge to be more daring in their approach, which is essential for innovation and growth. These findings emphasize the importance of leveraging the strengths and experiences of employees across different age groups to foster innovation in the workplace (24).

The results from the skill assessment mean comparison by education level indicate that postgraduates reported the highest levels of relationship-building and communication skills. Additionally, as the level of education increased, scores in turning ideas into products and processes also increased. Surprisingly, employees with intermediate education or less self-assessed their innovation skills to be comparable to or even higher than their more highly educated colleagues in three out of the four pillars. This highlights the potential of individuals with diverse educational backgrounds to contribute to innovation within the department (25,26). The ED brings together professionals from various disciplines, including doctors, nurses, paramedics, administrative staff, and others, each with unique expertise and perspectives. This inter-disciplinary collaboration fosters a diverse and rich pool of ideas, enabling the cross-pollination of innovative solutions and problem-solving approaches (27).

The findings from the skills assessment mean comparison by length of service suggest that employees with less than one year

of service did not perceive themselves to be more innovative than their colleagues with longer service. This lack of perceived innovation among new employees can be attributed to the formidable challenges associated with transitioning into a new work environment. These individuals may be in the process of acclimating to their roles, company culture, and the intricacies of their new positions, leaving them with less bandwidth to actively engage in innovative thinking. On the other hand, employees with more than ten years of service reported strong skills in creativity, problem-solving, and risk assessment, likely because of their accumulated experience. However, they expressed less confidence in their relationship management skills. These results suggest the need for continuous professional development programs to enhance the relationship management skills of long-serving employees (28).

The results from the skills assessment mean score comparison by profession show that nurses in the ED had higher self-assessed innovation capacities than doctors and other professionals, indicating their unique and crucial role in patient care innovation. The lower scores for doctors in risk-taking and entrepreneurship may be attributed to the perception that their roles necessitate strict adherence to standardized care, potentially inhibiting their inclination to innovate. This emphasizes the importance of cultivating innovation skills among doctors and encouraging a culture that supports risk-taking and entrepreneurial thinking within the healthcare profession to enhance patient care and drive progress in the field (29,30).

These insights can be extrapolated to other healthcare areas. Implementing the ISA tool in different hospital domains can establish innovation baselines, fostering continuous improvement. ISA's potential for benchmarking enables identifying best practices and driving positive change. Its scalability offers an opportunity to enhance global healthcare innovation by addressing post-pandemic challenges and financial constraints for improved patient outcomes and efficient healthcare delivery (31,32).

These findings have significant implications for the development of targeted interventions, training programs, and policies that foster an innovative culture within the department. Future research should explore the relationship between self-assessed innovation skills and actual performance while considering additional factors influencing healthcare innovation. As the next step, the potential for scaling this approach lies in the creation of low-cost, app-based innovation dashboards with real-time updates for benchmarking and driving continuous improvement. This scalable concept holds promise globally, including in HICs, where it can address financial crises, post-pandemic scenarios, and healthcare challenges. Widely

implementing the ISA can elevate healthcare innovation, enhance patient outcomes, and improve overall efficiency on a global scale.

Study Limitations

Our study is the first comprehensive assessment of its kind for innovation skills using the ISA tool for any ED globally. It has low resource utilization yet is rich in meaningful data, is administered online, has simple data analytics, and can be translated into other languages, allowing for a detailed understanding of the various dimensions of innovation given the dynamics of the ED. The balanced distribution of employees across demographic and professional factors contributes to the generalizability of the findings within the department. Additionally, conducting the study in a specific local context in Pakistan provides insights into innovation skills within a unique healthcare setting.

The self-assessed nature of the data introduces the potential for selection and reporting bias, as individuals may overestimate or underestimate their innovation skills. The study's focus on a single ED of a tertiary care hospital limits the generalizability of the findings to other healthcare contexts. Moreover, the absence of a comparison group hinders benchmarking and external validation of the self-assessments. Future research should consider incorporating multiple methods and expanding the study to include a larger sample size and diverse healthcare departments to enhance the robustness and generalizability of the findings.

Conclusion

The findings highlight the importance of fostering a culture of innovation within the healthcare sector, specifically in the ED, to improve patient outcomes. Surprisingly, younger employees did not perceive themselves as more innovative, challenging preconceptions, while older employees revealed room for improvement in entrepreneurial thinking. Education level played a role in relationship skills, showcasing the diverse contributions of individuals with varying educational backgrounds. Further research to validate self-assessments and understand the link between innovation skills and performance is crucial. Embracing innovation brings transformative changes to both low-resource and high-income healthcare settings.

Ethics

Ethics Committee Approval: Ethical approval was obtained from the Ethics Review Committee of Aga Khan University (approval no: 2022-1037-21623, date: 23.05.2022).

Informed Consent: Informed consent was obtained from the study participants.

Authorship Contributions

Concept: D.M., W.F., A.M., Design: D.M., W.F., A.M., Data Collection or Processing: H.N.T., A.R., A.M., Analysis or Interpretation: H.N.T., A.R., Z.A.A., D.M., W.F., A.M., Literature Search: Z.A.A., A.M., Writing: H.N.T., Z.A.A., A.M.

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Appendix 1. Survey instrument

PILLAR #1: GENERATING IDEAS

Low → High	(Circle the number indicating your choice)	Low → High
SELF-ASSESSMENT	Act and Contribute	JOB ASSESSMENT
1 2 3 4 5	You look for new ways to create value in products, processes, services	1 2 3 4 5
1 2 3 4 5	You are good at identifying problems and potential solutions	1 2 3 4 5
1 2 3 4 5	You question assumptions and recognize opportunities for change	1 2 3 4 5
1 2 3 4 5	You like to seek different points of view	1 2 3 4 5
1 2 3 4 5	You are adaptable and flexible	1 2 3 4 5
1 2 3 4 5	You like to rethink the way things are done	1 2 3 4 5
1 2 3 4 5	You approach challenges creatively	1 2 3 4 5
1 2 3 4 5	You look for surprising connections	1 2 3 4 5
1 2 3 4 5	You put forward your own ideas with confidence	1 2 3 4 5
1 2 3 4 5	You like to suggest alternative ways to achieve goals	1 2 3 4 5
1 2 3 4 5	You evaluate solutions so as to make recommendations or decisions	1 2 3 4 5

SELF-ASSESSMENT	Manage and Support Others	JOB ASSESSMENT
1 2 3 4 5	You trust other people's ideas and actions	1 2 3 4 5
1 2 3 4 5	You nurture and promote creativity and inventiveness	1 2 3 4 5
1 2 3 4 5	You like to question and challenge the way things operate	1 2 3 4 5
1 2 3 4 5	You have a vision of where you (and your organization) want to go	1 2 3 4 5
1 2 3 4 5	You are open to new ideas and different ways of doing things	1 2 3 4 5
1 2 3 4 5	You keep track of your success and failures to find ways to improve	1 2 3 4 5
1 2 3 4 5	You recognize and reward original ideas and ideas for improvement	1 2 3 4 5

PILLAR #2: TAKING CALCULATED RISKS AND BEING ENTREPRENEURIAL

Low → High	(Circle the number indicating your choice)	Low → High
SELF-ASSESSMENT	Act and Contribute	JOB ASSESSMENT
1 2 3 4 5	You are comfortable pursuing new opportunities	1 2 3 4 5
1 2 3 4 5	You are able to identify, quantify and qualify a risk	1 2 3 4 5
1 2 3 4 5	You are comfortable taking appropriate risks	1 2 3 4 5
1 2 3 4 5	You identify, control, and avoid dangers and threats	1 2 3 4 5
1 2 3 4 5	You stay focused on what you are trying to achieve when suggesting alternative ways to get a job done	1 2 3 4 5
1 2 3 4 5	You can see your risk-taking paying off	1 2 3 4 5
1 2 3 4 5	You learn from your experiences and are not afraid to make mistakes	1 2 3 4 5
1 2 3 4 5	You are willing to experiment with new ideas	1 2 3 4 5
1 2 3 4 5	You can take actions without knowing every outcome or consequence	1 2 3 4 5
1 2 3 4 5	You have confidence to apply skills in new and unfamiliar situations	1 2 3 4 5

SELF-ASSESSMENT	Manage and Support Others	JOB ASSESSMENT
1 2 3 4 5	You encourage individuals and teams to bring forward new ideas	1 2 3 4 5
1 2 3 4 5	You support risk by monitoring and evaluating decisions and actions	1 2 3 4 5
1 2 3 4 5	You are resilient in facing setbacks, mistakes, and potential mistakes	1 2 3 4 5
1 2 3 4 5	You do not penalize unforeseeable mistakes	1 2 3 4 5
1 2 3 4 5	You are accepting of failures and willing to learn from them	1 2 3 4 5
1 2 3 4 5	You recognize and reward the pursuit of new opportunities	1 2 3 4 5

PILLAR #3: DEVELOPING AND MAINTAINING INTERPERSONAL RELATIONSHIPS

(Circle the number indicating your choice)

Low → High		Low → High
SELF-ASSESSMENT	Act and Contribute	JOB ASSESSMENT
1 2 3 4 5	You engage others to make use of their skills, knowledge, and abilities	1 2 3 4 5
1 2 3 4 5	You build and maintain relationships inside and outside of your organization, and with people from diverse backgrounds	1 2 3 4 5
1 2 3 4 5	You recognize that relationships are reciprocal	1 2 3 4 5
1 2 3 4 5	You understand and work within the dynamics of a group	1 2 3 4 5
1 2 3 4 5	You share information and expertise with colleagues and partners	1 2 3 4 5
1 2 3 4 5	You respect/support ideas, approaches, and contributions of others	1 2 3 4 5
1 2 3 4 5	You listen to and value diverse opinions and perspectives	1 2 3 4 5
1 2 3 4 5	You accept and provide feedback in a constructive manner	1 2 3 4 5
1 2 3 4 5	You overcome barriers among people that may impede results	1 2 3 4 5

SELF-ASSESSMENT	Manage and Support Others	JOB ASSESSMENT
1 2 3 4 5	You encourage, mentor and coach others to share ideas freely	1 2 3 4 5
1 2 3 4 5	You involve others by delegating responsibility and supporting efforts	1 2 3 4 5
1 2 3 4 5	You make it easy for people to collaborate and deliver new solutions	1 2 3 4 5
1 2 3 4 5	You allocate resources for networking and sharing of ideas and skills	1 2 3 4 5
1 2 3 4 5	You promote personal development in others	1 2 3 4 5
1 2 3 4 5	You provide guidance, honest praise and constructive feedback	1 2 3 4 5
1 2 3 4 5	You recognize and reward the success of individuals and teams	1 2 3 4 5

PILLAR #4: TURNING IDEAS INTO PRODUCTS, PROCESSES AND SERVICES

(Circle the number indicating your choice)

Low → High		Low → High
SELF-ASSESSMENT	Act and Contribute	JOB ASSESSMENT
1 2 3 4 5	You set realistic goals and priorities	1 2 3 4 5
1 2 3 4 5	You access and apply knowledge and skills from many sources	1 2 3 4 5
1 2 3 4 5	You show ingenuity in devising, planning and implementing solutions	1 2 3 4 5
1 2 3 4 5	You plan for contingencies and are ready with alternative strategies	1 2 3 4 5
1 2 3 4 5	You adapt to changing requirements	1 2 3 4 5
1 2 3 4 5	You use the right tools or technologies to complete tasks and projects	1 2 3 4 5
1 2 3 4 5	You are tenacious—you show initiative and commitment	1 2 3 4 5
1 2 3 4 5	You accept feedback and are willing to learn from your mistakes	1 2 3 4 5
1 2 3 4 5	You check to see if a solution works and look for improvements	1 2 3 4 5
1 2 3 4 5	You use metrics to measure and show the value of a solution	1 2 3 4 5
1 2 3 4 5	You are accountable for what you and your group do	1 2 3 4 5

SELF-ASSESSMENT	Manage and Support Others	JOB ASSESSMENT
1 2 3 4 5	You adopt and promote a “can do” attitude	1 2 3 4 5
1 2 3 4 5	You understand how change affects the performance of organizations	1 2 3 4 5
1 2 3 4 5	You are proactive in leading and responding to change	1 2 3 4 5
1 2 3 4 5	You empower others to make decisions	1 2 3 4 5
1 2 3 4 5	You are tolerant of mistakes when trying out new ideas	1 2 3 4 5
1 2 3 4 5	You value, support, and reward initiative	1 2 3 4 5
1 2 3 4 5	You celebratenew products, services, processes, strategies, etc.	1 2 3 4 5
1 2 3 4 5	You measure impacts of solutions on organizational performance	1 2 3 4 5