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The Relationship Between UAE Advanced National Skills and The Future Innovation Skills in The Public Sector

Hamid Saeed[1], Melodena Stephens[2], Arthur Seakhoa-King[3]

[1]The British University, Dubai, UAE

[2,3]Mohammed Bin Rashid School of Government, Dubai, UAE

Abstract

Governments around the world are finding innovative ways to serve their citizens and stay competitive. The United Arab Emirates has introduced a number of initiatives to develop its workforce to be the most innovative in the delivery of public services to its citizens and expatriates alike. However, it is unclear to what extent the national advanced skills may have contributed to improving core innovation skills among public sector employees. The underlying study surveyed public sector employees to investigate the relationship between the UAE national advanced skills strategy and core innovation skills for public sector employees as identified by the OECD. The UAE advanced national skills are divided into foundational literacies, competencies, and character qualities. The six core skills identified by OECD consisted of iteration, data literacy, user-centricity, curiosity, storytelling, and insurgency. Data were collected from 369 employees working in the public sector in various positions in Dubai government entities. The findings revealed that there is a significant positive relationship between the national advanced skills of the UAE and future innovation skills as perceived by the public sector employees. National advanced skills scored a mean of 3.65 indicating that employees have a medium to a high perception that they possess these skills. In addition, among the six core innovation skills, the employees rated their level of curiosity with a mean score of 3.77. It may be concluded that national advanced skills have significantly and positively impacted and will continue to impact the core innovation skills of the public sector workforce in the UAE.

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[1]Corresponding Author, email: hamid.saeed@buid.ac.ae

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[2]Second Author, email: Melodena.stephensb@mbrsg.ac.ae
[3]Third Author, email: Arthur.king@mbrsg.ac.ae

Keywords

Innovation Skills; Advanced National Skills, Public Sector Innovation, United Arab Emirates.

Introduction

Innovation in the government is finding new methods to affect peoples' lives and new ways to engage them as stakeholders in shaping the future together. It entails a never-ending process of overcoming outdated structures and ways of thinking to embrace new technology and ideas. The potential for government innovation is enormous; nevertheless, the challenges that governments face are substantial. Despite this, governments are changing how they function to realize this potential (OECD, 2017, p. 2). One of the difficulties for public servants is increasing capacity via skills development since they are dealing with problems of unprecedented complexity in societies that are more varied and demanding than ever before. The technology-pull and demand-push (Clausen, Demircioglu, & Alsos, 2019) factors have put further pressure on the workforce. At the same time, governance processes and technologies are becoming more digital, open, and networked. Therefore, civil servants need the right skills. Individual employees' innovation behavior is deemed one of the contributing factors in achieving the desired goals, presenting a double challenge (Khan, & Krishnan, 2021). First, determine which talents will be required for a fit-for-purpose civil service today and in the future; second, determine how civil services might invest in these abilities (OECD, 1997).

In line with the global drive towards innovation, United Arab Emirates introduced several measures to promote innovation at all levels, including the public sector. The Mohammed Bin Rashid Centre for Government Innovation (MBRCGI) has been instrumental in advancing government efforts to develop an efficient framework for fostering innovation in government as well as the acceptance and implementation of new initiatives. MBRCGI has offered multiple activities and gathered thousands of representatives from both federal and local governmental organizations. Additionally, it has offered several specialized programs to encourage an innovation-friendly culture and highlight the value of government innovation, particularly in the delivery of services, boosting the effectiveness of procedures, and keeping up with the most recent technological advancements (MBRCGI, 2023). All government organizations must continue to foster innovative leadership practices to support government innovation programs among federal and local government employees. Since leadership is one of the most important predictors of employee innovative work behavior.

The National Innovation Strategy (NIS) of the UAE recognizes the importance of human capital compared to urban development. Innovation champions are one of the critical pillars of this strategy (UAE NIS, 2015). It is envisaged that academic institutions play an essential role in promoting innovation by developing the capabilities of individuals and realize their full potential. However, there appears to be a paucity of research investigating the level of skills among the existing workforce in the public sector and to what extent these skills are related to advanced national skills program. Therefore, this study is an attempt to study the impact of national advanced skills on the innovation skills of the public sector workforce in UAE. A previous study conducted by Batey et al. (2018) investigated creativity and innovation at the individual, team, and organizational levels in the Dubai Government by using a combination of scales. The justifications, patterns, and effects of innovations in the UAE's public management system were examined by Khalid and Sarker (2019). According to these researchers, the UAE Government has launched a massive innovation program to promote innovation and meet the needs of the UAE's vision for future government services. The UAE's public management system is evolving in a manner that is consistent with world trends. In terms of improving efficiency, effectiveness, citizen satisfaction, and citizen trust in public services, the results of innovations have proven to be positive. Nevertheless, the present study has adopted the OECD model of six core skills. The study is significant as it intends to support the government's efforts to achieve the objectives of the National Innovation Strategy by empirically investigating the relationship between advanced national skills and future innovation skills.

Core Innovation Skills for the Public Sector

OECD (2017) has identified four specific tasks and skills required for civil services. Policy guidance and analysis, service delivery and citizen involvement, communication and contracting, and network management are among these skills. It argued that running the governments with qualified professionals will not automatically provide solutions to emerging challenges. Future-oriented and evidence-based government servants are needed. This necessitates the learning of new skills, the redesign of governing tools, and the development of unique solutions to meet rising demands and give value to the public. Identifying the required skills is the first step toward creating a civil service that is future-ready.

When it comes to public sector innovation, the OECD designed a model to encourage and facilitate innovation in government agencies. The model consists of six core skills that every

worker in the public sector must possess. It is not expected that these skills are possessed or used by all categories of employees. However, to encourage innovation in the public sector, some level of practice is necessary. These six skills have been outlined as under.

Iteration

Iteration is defined as gradually and experimentally developing policies, products, and services. It involves project management approaches, prototyping, experimentation, and risk-taking (Hughes, 2013). According to the project management method, projects should be split into clearly defined stages that are time-bound and have realistic goals. Models, drawings, and mockups should be produced and tested progressively during prototyping. Experiments and tests are reliable techniques for determining if a method works. Therefore, employees can reduce their risk by using iterative, incremental, and risk-taking techniques. According to Sjödin et al. (2020), themes and overarching dimensions can be found through a process of comparisons and iterations to create an empirically grounded model.

Data Literacy

Data literacy is the second core skill that OECD lists for public sector employees. Data literacy means making sure decisions are supported by evidence-based data. The data literacy scale used consists of skills required for data collection, working with the analysts, communicating results, and making sound decisions based on evidence. According to Ellitan (2020), data literacy is necessary to advance employee abilities for processing and analyzing big data to enhance public services. Van Ooijen, Ubaldi, and Welby (2019) argue that governments must now take things a step further and center their thinking on the value and role of data in the digital transformation of government. A data-driven public sector acknowledges data as an asset, essential to determining policy, providing services, managing organizations, and innovating. By encouraging evidence-led policymaking and data-backed service design, also by combining the good governance traits of honesty, openness, and fairness into the policy cycle, governments can have a promising influence on the results they produce.

User Centricity

User needs should be the primary emphasis of public services. A user-centric strategy, in broad terms, is one in which governments engage individual citizens' needs and encourage direct participation in policymaking, service design, and delivery. Thus, when creating, delivering, implementing, and assessing public policies and services, it is essential to include the demands

and voices of the people. Governments may accomplish this by including citizens directly in decision-making processes and collecting and analyzing data that can be used to both assess and predict the performance of policies and services concerning people's needs and expectations. The six-item scale used to assess user-centricity consisted of user need analysis, user education, partnerships, and behavioral science techniques. According to Obedait, Youssef, and Ljepava (2019), a customer-centric strategy is being used for technology-enabled governance around the globe, as well as in the United Arab Emirates. According to Gibbons (2016), using a user-centric approach while solving a problem can result in innovation, and innovation can result in distinction and competitive advantage.

Curiosity

Curious people tend to ask insightful questions and provide creative solutions to problems (Cain, 2019). It is part of an inherent desire to look for and experiment with new concepts or methods and encompasses the human traits of recognizing new ideas, and methods of working, adopting tactics utilized elsewhere, rephrasing issues, shifting views, and continuing to learn. Some studies have found a positive association between curiosity and creativity (Schutte, & Malouff, 2020). Liu et al. (2020) also found a significant correlation between innovation and curiosity.

Storytelling

Stories have been a component of human society since the beginning. In an ever-changing world, storytelling is about communicating. By discussing the past, present, and prospective futures, telling the "narrative" of change helps to generate support and engage people. Within organizations, leaders and others may use storytelling in a variety of ways, including explaining who they are, imparting lessons, sketching out the future, and motivating people to take action. Staying static is no longer the goal of change in the public sector (Soule, 2002). Change, on the other hand, is continuous as user expectations and requirements are changing constantly. People naturally exchange information and pass on expertise via stories. User requirements and priorities may be expressed through stories strongly and effectively. There are various dimensions of storytelling when it comes to the public sector: using narratives means different people absorb information in different ways; user storytelling means using a variety of methods to help spread the message as far as possible; working with multiple media and methods; teaching methods where innovation is driven by exchanging knowledge and practice. Stories can be an effective tool for sharing information and experiences. According to Sergeeva and

Trifilova's (2018), storytelling aids in the dissemination of innovative ideas both within the organization and among peers. Stories of failed innovation endeavors also help organizations learn from them. Digital storytelling has also been identified as 21st Century skill by some studies (Dalim et al., 2019; Cigerci, 2020; Gürsoy, 2021).

Insurgency

Internal 'insurgents' or' rebels' striving to change the way things are done are sometimes referred to as government innovators. Insurgency is about making new things happen and curiosity is the lifeblood of innovation. Given the problems that the public sector faces today, it entails challenging the status quo as many voices oppose doing things differently, forming coalitions, and collaborating with unexpected partners. In addition, working with individuals, employees would not usually think of can lead to new synergies and approaches. Insurgency as a future innovation skill has received little or no attention in the literature. Therefore, studying it as an emerging core skill in the public sector will fill the gap in the literature.

UAE National Advanced Skills

The National Program for Advanced Skills in the UAE includes both technical and soft skills. There are three main categories of skills. The foundational literacies in science, technology, and finance are soft skills, along with competencies like critical thinking, creativity, communication, and collaboration, as well as personality traits like adaptability, leadership, social and cultural awareness, empathy, and growth mindset. The targeted segments of the population are high school students, university graduates, and employees.

The National Program for Advanced Skills features an interactive self-assessment game called "Future Fit" that allows users to examine themselves, determine which of the listed skills they are most skilled in, and then help them grow in the other abilities. Nine federal and local government entities make up the Advanced Skills Council, which is tasked with overseeing pertinent policies, programs, and initiatives to motivate the community and offer chances for all groups to develop advanced skills and take charge of their development through lifelong learning.

Conceptual Model and Hypothesis

Figure 1 shows the conceptual framework of the study. The study consisted of national advanced skills as an independent variable and a set of six core future innovation skills as the dependent variable.

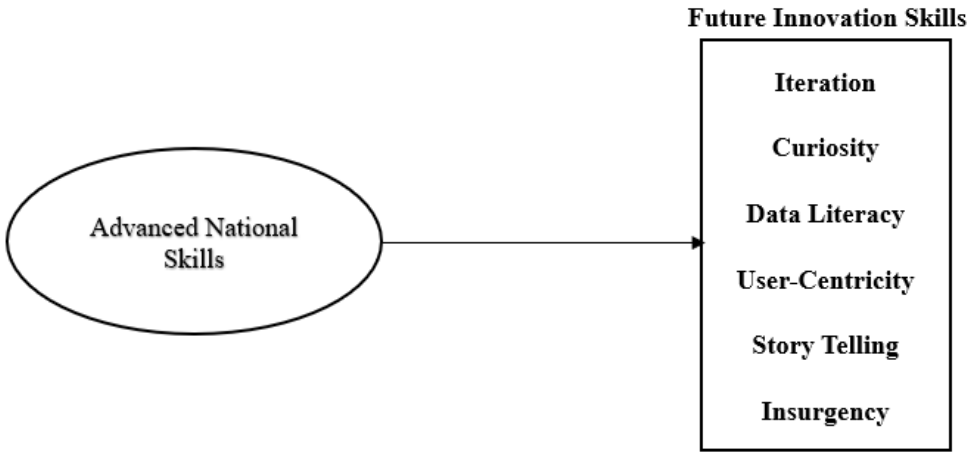

Figure 1. Conceptual framework

The main objective of the study was to investigate the relationship between advanced national skills and core innovation skills for public sector employees. Therefore, the following hypothesis has been established:

H: There is a significant relationship between advanced national skills and core innovation skills

The main hypothesis leads us to the following sub-hypotheses:

H_a: There is a significant relationship between advanced national skills and iteration

H_b: There is a significant relationship between advanced national skills and curiosity

H_c: There is a significant relationship between advanced national skills and data literacy

H_d: There is a significant relationship between advanced national skills and user-centricity

H_e: There is a significant relationship between advanced national skills and storytelling

H_f: There is a significant relationship between advanced national skills and iteration

Methodology

Population and Sampling

All Dubai government employees, regardless of their rank, made up the population. The survey was sent out through email using Dubai Government Advertorial, a service offered by Smart

Dubai. A total of 369 respondents attempted the questionnaire in full. A sample size of 383 was deemed representative of this population with a confidence level of 95%.

Measurement

The questionnaire used in this study was based on the innovation skills framework for public sector employees developed by the OECD. The OECD skills model for public servants consists of six core areas. The core skill areas in this model are iteration (5 items), data literacy (5 items), user-centricity (5 items), curiosity (4 items), storytelling (5 items), and insurgency (4 items). The advanced national skills were assessed by using a 12-item scale. Each item represented one skill category as defined by the UAE's National Program for Advanced Skills. All responses were recorded on a scale of 1-5, where 1 = low and 5 = high.

Pilot Testing

Before the distribution of the questionnaire, a pilot test was conducted internally among the academic and administrative staff. The original questionnaire was in English and later translated into Arabic. Therefore, giving the respondents the choice of their preferred language. Data was gathered using an online survey tool, and SPSS 26 was then used to analyze it. The Cronbach's alpha values were under the acceptable range.

Empirical Findings

Demographic Statistics

Among the respondents, 44% were UAE nationals, and 56% were expatriates. The gender differences consisted of 64% males and 36% females among the respondents. In terms of age groups, 22% were in the age group 25-34; 45% were 35-44, and the remaining 33% were above 45. In terms of educational qualifications, most respondents (49%) had a Bachelor's degree, 25% a Master's, 7% doctorate, and 19% had a high school or lower qualification. The service tenure for the majority of respondents was above 8 years (63%). A vast majority were working in large entities having more than 3000 employees.

Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was computed using AMOS to test the measurement model. Factor loadings were assessed for each item. All factor loadings were under the acceptable range, as shown in Figure 2 with significant values ($p < 0.001$). The model fit values (see Table 2) were found to be within the acceptable range where CMIN = 725.299, DF =

719.000, CMIN/DF = 1.009, and CF1 = 0.999. Similarly, RMSEA = 0.005, PCLOSE = 1.000, and SRMR 0.035 represented good model fitness as suggested by Hair et al., (2020), and Hu and Bentler, (1999). Additionally, the measurement model's convergent and discriminant validity were established. The constructs in this investigation had AVE values that varied from 0.528 to 0.619 (See Table 1). Additionally, as shown in Table 1, the composite reliability (CR) for all the variables was within a decent range, indicating that the constructions had respectable reliability. As a result, we were able to continue SEM testing because all the requirements for measurement fitness had been met.

Table 1. Reliability Analysis using CR and AVE

Variable	CR	AVE	MSV	MaxR(H)
National Skills	0.941	0.57	0.227	0.941
Story Telling	0.89	0.619	0.264	0.892
User Centricity	0.861	0.554	0.238	0.864
Iteration	0.858	0.548	0.188	0.866
Digital Literacy	0.865	0.562	0.144	0.867
Curiosity	0.822	0.536	0.264	0.825
Insurgency	0.817	0.528	0.207	0.818

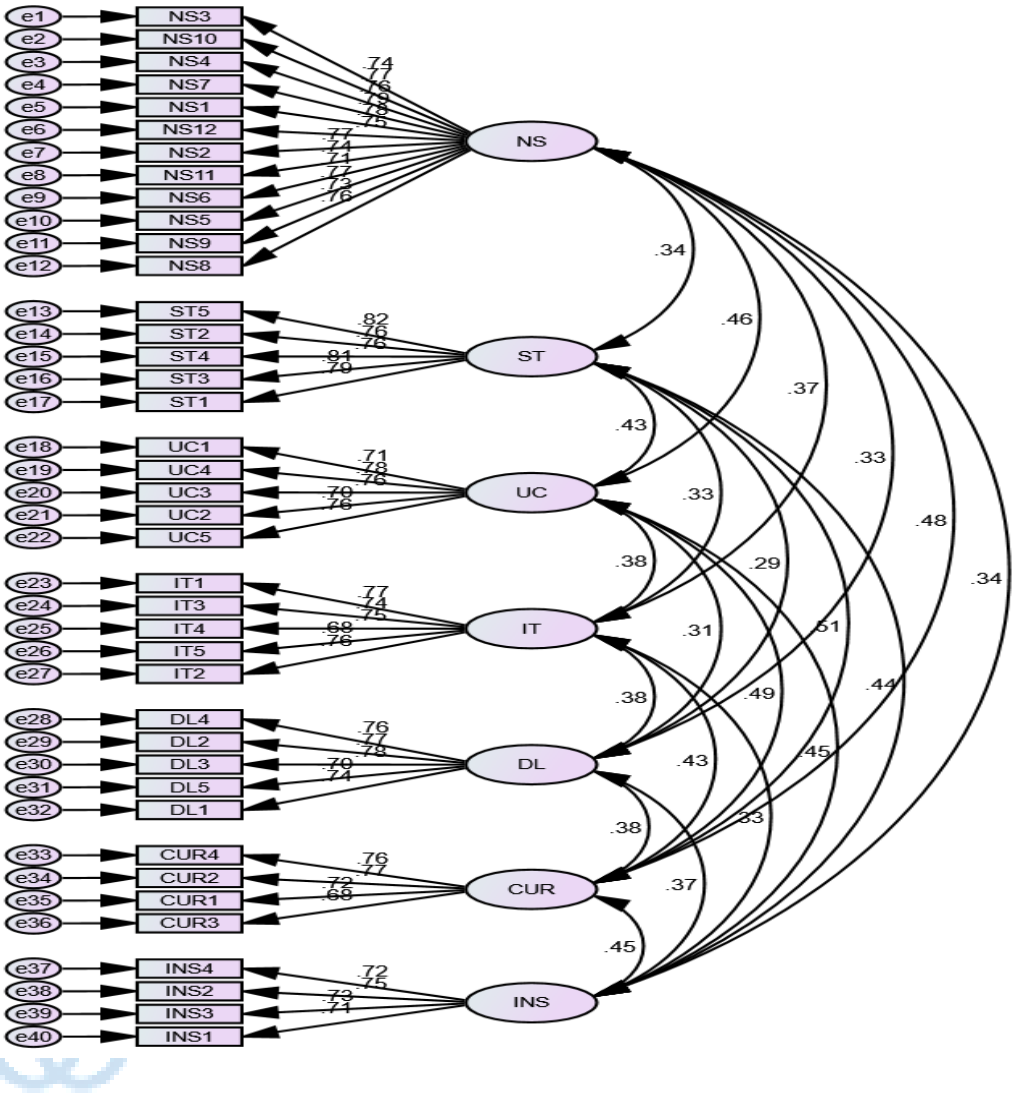

Figure 2. Measurement model

Table 2. Model fits

Measure	CMIN	DF	CMIN/DF	CFI	SRMR	RMSEA	PClose
Estimate	725.299	719	1.009	0.999	0.035	0.005	1
Threshold	--	--	Between 1 and 3	>0.95	<0.08	<0.06	>0.05

Descriptive Statistics and Correlation Analysis

Descriptive statistics and Pearson correlations among the variables are displayed in Table 3. The highest mean score was for curiosity at 3.77 (St. Dev = 0.899). Skewness results were within the specified acceptable limits, which ranged from -0.662 to -0.979. The data were confirmed to be normally distributed by the Kurtosis values, which ranged from +0.948 to -

0.104 and met the normality acceptance criterion. The correlations among all the variables were found to be significant and positive. This shows that advanced national skills are positively and significantly related to core innovation skills.

Table 3. Descriptive statistics and correlation analysis

Variable	Mean	Std. Dev	NS	ST	UC	IT	DL	CUR	INS
NS	3.65	0.836	0.755						
ST	3.68	0.940	0.339***	0.787					
UC	3.67	0.918	0.456***	0.427***	0.745				
IT	3.62	0.852	0.372***	0.328***	0.376***	0.74			
DL	3.74	0.808	0.334***	0.290***	0.313***	0.377***	0.75		
CUR	3.77	0.899	0.476***	0.514***	0.488***	0.434***	0.380***	0.732	
INS	3.74	0.893	0.340***	0.440***	0.455***	0.330***	0.368***	0.451***	0.726

Note: N = 369, $p < 0.01$

Structural Equation Modeling

Through structural equation modeling, the research model was further examined (Figure 3). The study's hypothesis was further tested using multiple regression analysis. National advanced skills were the predictor variable and six innovation skills were the outcome variables of this study. The multiple regression results were obtained through AMOS and SPSS 26.

In this SEM model, (Figure 3) the overall direct effect of advanced national skills (NS) on each outcome variable was examined. The standardized results are reported in Table 4. The results showed that national advanced skills have a significant positive influence on storytelling ($\beta = 0.374$, $p < 0.001$), user-centricity ($\beta = 0.485$, $p < 0.001$), iteration ($\beta = 0.401$, $p < 0.001$), digital literacy ($\beta = 0.361$, $p < 0.001$), curiosity ($\beta = 0.510$, $p < 0.001$), and insurgency ($\beta = 0.375$, $p < 0.001$) respectively. Hence our hypothesis that there is a significant and positive relationship between national advanced skills and core innovation skills was supported.

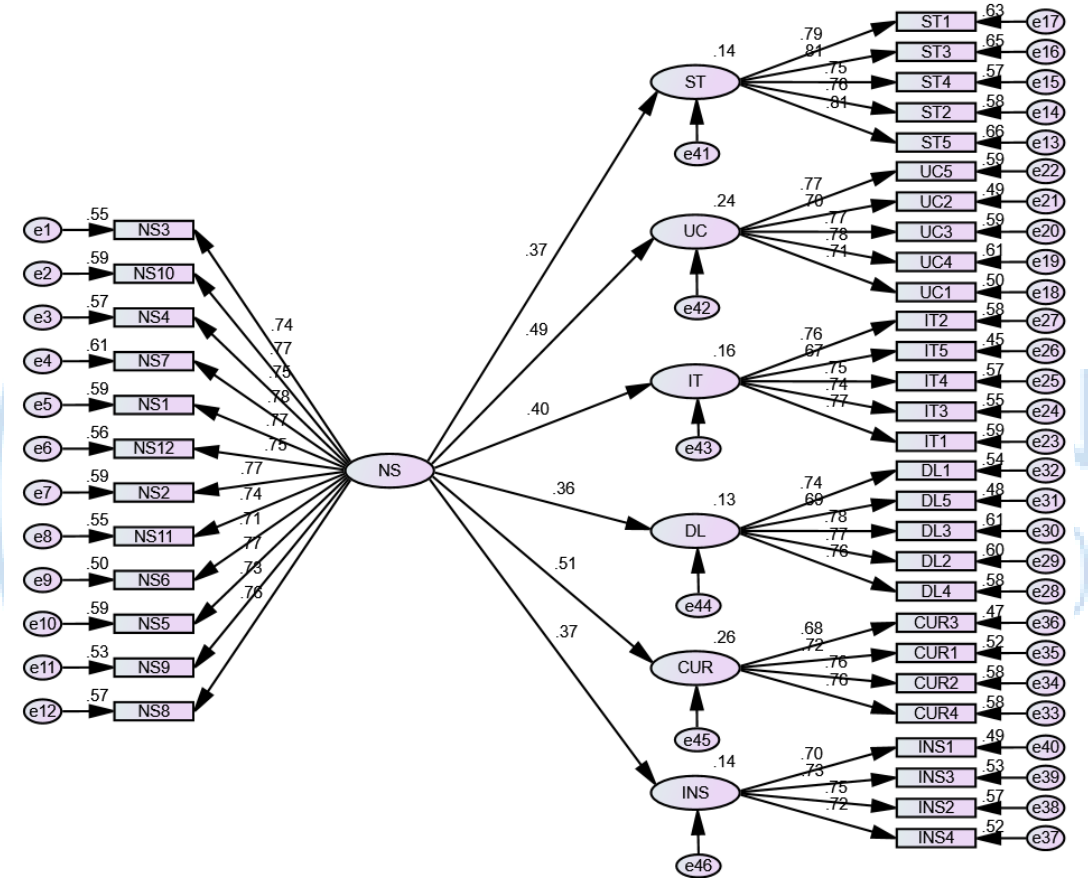

Figure 3. Structural equation modeling

Table 4. Effect of national advanced skills (NS) on six core innovation skills

	Relationship		Estimate	S.E.	C.R.	P	R-Square
ST	<---	NS	.374	.067	6.467	***	0.14
UC	<---	NS	.485	.064	7.791	***	0.24

	Relationship		Estimate	S.E.	C.R.	P	R-Square
IT	<---	NS	.401	.062	6.706	***	0.16
DL	<---	NS	.361	.055	6.080	***	0.13
CUR	<---	NS	.510	.069	8.186	***	0.26
INS	<---	NS	.375	.066	6.058	***	0.14

We further tested the impact of advanced national skills on the overall core innovation skills of the existing workforce in the public sector of Dubai. The results showed that national advanced skills significantly and positively ($\beta = 0.619$, $p < 0.001$) impacted the core innovation skills. The R^2 value for this model was 0.38 indicating a 38% variation in the core innovation skills as impacted by national advanced skills. This states that an increase in the national advanced skills among employees in the public sector will have an improvement of 38% in innovation skills for the existing and future workforce.

Discussions and Conclusions

The main objective of this research was to determine the relationship between the national advanced skills of the UAE and the core innovation skills of the public sector workforce as defined and identified by OECD. We, first, determined the impact of national advanced skills on each innovation skill. Then, we also determined the combined impact between national advanced skills and innovation skills.

The findings from this study confirmed the significant contribution of the UAE's advanced national skills and justified an effective public training system. Under this program, getting into training, changing careers, and learning new skills are numerous goals that are achievable at almost any time in life. The skills training program reflects the many entrance points for employees and job seekers in the UAE, and its flexibility is in line with desired strategic objectives. There is, though, a need for the strong commitment of the partners - the industry, education, and the government to cooperate in delivering skills and achieving its targets.

In a nutshell, it can be concluded that the public sector workforce in Dubai is moderate to highly skilled. The majority of the employees possess the core skills for innovation from medium to high degree. Skills related to curiosity are perceived to be better possessed as

compared to the other five skills. Skills related to storytelling, digital literacy, and insurgency are required to be improved as these highly desirable innovation skills were rated lower. Likewise, data interpretation and storytelling need to be improved. It should be noted that the national skills strategy was at its early stage of implementation at the time of data collection for this study. Therefore, it is strongly recommended to assess its impact periodically to understand the true potential and outcomes of the national skills program. A variety of research methodologies such as qualitative research design (focus groups, interviews) may be used. In this study, the 12-item scale representing each skill set that was used to measure the national skills was very generic in nature. A more specific scale may be used to evaluate each skill set for a deeper and more accurate measurement of the level of skill attainment and its impact on the outcome variables. The scope of future studies may be expanded to other emirates and entities across the UAE.

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