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RECEIVED 15 September 2023

ACCEPTED 29 November 2023

PUBLISHED 14 December 2023

CITATION

Pandya B, Ruhi U and Patterson L (2023)
Preparing the future workforce for 2030: the
role of higher education institutions.
Front. Educ. 8:1295249.
doi: 10.3389/feduc.2023.1295249

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Preparing the future workforce for 2030: the role of higher education institutions

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The invasion of futuristic technologies has made it inevitable for the future workforce to confront this reality and be ready to work in the new world of work in 2030. Higher education institutions (HEIs) are obligated to assume a pivotal role in equipping students with the requisite competencies. COVID-19 has expedited the development process compelling HEIs to make a mega shift to prepare the future workforce. Primary data was collected from HEI students across 11 countries to analyse their confidence to work in the new world of work in 2030 and to understand the role of HEIs in influencing students' confidence. Exploratory Factor Analysis (EFA) and Partial Least squares (PLS) based structural equation modeling (SEM) procedures were employed to estimate a structural model of awareness and readiness (cognitive) and confidence (affective) factors, and the combined effect of HEI, awareness, and readiness on overall student confidence in their knowledge, skills and abilities. The statistical results indicate that there are strong significant relations between the HEI-Awareness; HEI-Awareness-Confidence; HEI-Readiness; and HEI-Readiness-Confidence and these dependencies are not just by chance. The results of this research are significant for higher education policy developers and curriculum developers to incorporate future competencies in the program. Further, educators and researchers will benefit from the results to develop teaching strategies and content to equip the future workforce for 2030.

KEYWORDS

future workforce, higher education, future work, self-efficacy, work readiness, confidence, awareness, students' perception

1 Introduction

The invasion of virtual reality, augmented reality, mixed reality, artificial intelligence, and machine learning in the faculty lounge took over the scholarly discussions. It is inevitable for the future workforce to confront this reality and be ready to work in the new world of work in 2030. It has become imperative for higher education institutions (hereafter, HEIs) to play a significant role in enabling the students with the required knowledge, skills, abilities, and other characteristics (KSAO) to become a successful workforce of the future. McKenzie reported the anticipated displacement of over 375 million jobs with new jobs by 2030 (Manyika et al., 2017), a prediction supported by PwC (2018), raising questions about the intervention of human capital in future jobs. This paradigm shift in the world of work is not confined to specific regions, as reports suggest its implications will span across all nations. For instance, Western countries are projected to witness a 50% job displacement, while in the Middle East, the impact may reach up to 40%. The advent of COVID-19 has accelerated this transformative process, compelling HEIs

to undergo a significant shift in preparing the future workforce (Abbas Zaher et al., 2021; Godber and Atkins, 2021; Verde and Valero, 2021; Saleem et al., 2022). Camp et al. (2020) reported the need for readjusting employee roles and competencies to align with the post-pandemic 'new normal', emphasizing its enduring nature.

The future workforce will predominately consist of Millennials and Generation Z, the current student body pursuing their senior high school and post-secondary education. Their readiness, awareness, and confidence to work in the new world of work in 2030 are pivotal for their success, and HEIs must guide them through influence (Azhenov et al., 2023). Pandya et al. (2020) established the critical role of HEIs in developing knowledge, skills, abilities, and other characteristics required to perform well in the new world of work. The researchers also suggested that HEIs should influence the students to become more confident in performing future work. This research paper extends the work conducted by Pandya et al. (2020), aiming to investigate the role of HEIs in building students' confidence for future work.

While a wealth of literature exists on students' confidence, the importance of work-readiness, and the role played by HEIs in enhancing competencies is available, there remains a dearth of research gap concerning the influence of HEIs on student awareness, readiness and confidence to work in the new world of 2030. HEIs must comprehend the intricate relationship between these variables and reassess their educational policies, programs, systems and capabilities to adequately prepare students for the new world of work. This study aims to elucidate the role of HEI in preparing students for the new world of work by elevating awareness, readiness and confidence to work in future. It also presents the interrelationship between these competencies and contributing new knowledge to this field.

2 Theoretical background

This new world of work in 2030 will rely heavily on partnerships between humans and technology (Manyika et al., 2017; Schwab, 2018) leading to the displacement of existing jobs by artificial intelligence (CBRE, 2014; PwC, 2018). The physical, technological, purposeful, and emotional reforms of the workplace in past decade have already reared a significant challenge for the workforce in adapting to this new dynamic (Jones and Punshi, 2013). A new set of competencies among students will be imperative to navigate in the new world of work in 2030 (Pandya et al., 2020). Future job performance will necessitate certain competencies (Goffin and Woycheshin, 2006) aligned with measurable skill sets against performance expectations (Fawcett, 2017). Mahmud and Wong (2022a,b), have identified and emphasized the development of 21st-century skills, categorizing them into four groups: Data literacy skill, Problem-Solving skill, Programming skill and Creative thinking skills. Another study by Mahmud and Wong (2022b) underscores the importance of HEIs in equipping undergraduate students with these 21st-century skills for employability.

The regional meeting of Ministers of Education of Latin America and the Caribbean has accentuated the role of HEIs in fostering 21st-century skills through improvements in education quality, curriculum revisions, program development, and policy design (UNESCO Office Santiago and Regional Bureau for Education in

Latin America and the Caribbean, 2017). The Dubai Initiative (2016) posits that the ongoing advancement of digitalization and automation will continually redefine competency requirements for employees in the coming years. Consequently, it becomes important to assess if HEIs are adequately preparing students for the future workplace. It becomes imperative to dissect the existing literature to find if HEIs influence readiness, confidence, and awareness amongst the students for future work.

While readiness, confidence, and awareness have been explored in earlier scholarly works, the precise definitions remained unexplored. To address this, we turn to the Merriam-Webster dictionary, defining all three aspects as "the quality or state of being." In this study, awareness refers to the state of being aware (knowledge and understanding), readiness refers to the state of being prepared and at ease, and confidence is a state of being certain. Here, for this study awareness will be the state of knowing the future world of work and the competencies required to be successful in that world of 2030. Readiness means preparing oneself for the new world by seeking associated competencies delivered by HEIs. Confidence implies being certain of implementing these competencies upon entering the new workforce of 2030.

Several studies have delved into the pivotal role that HEIs play in raising readiness, awareness and confidence among students (Payne et al., 2008; Casey et al., 2011; Lozano et al., 2012; Martin et al., 2020). Casey et al. (2011) investigated students' beliefs regarding their readiness to enter the workforce, discovering that students exhibited high confidence in their job competencies. While this quantitative study assessed students' comfort with competencies applicable to their practice and gathered recommendations for HEIs to enhance job preparation, the focus remained predominantly on readiness, providing only a superficial understanding of the association between readiness and students' confidence in their future practice.

An earlier study by Payne et al. (2008) systematically explored students' concerns about their competencies for success (readiness) and their confidence in implementing these competencies in practice (confidence). Findings revealed that despite being ready, students lacked confidence and motivation to apply such competencies, highlighting a gap in self-confidence and self-efficacy. Hoover et al. (2018) tapped into the relationship between the students' confidence and readiness to perform their tasks but did not explicitly address the influence of HEIs in shaping these dimensions.

In the realm of building confidence among students, Pollock et al. (2004) posited that HEIs should organize awareness events and campaigns on their campuses. These initiatives may include sessions with role models, speakers raising career awareness, and educational sessions on careers and requisite competencies. However, Maxwell et al. (2016) cautioned that while students' confidence and awareness are interconnected, evaluating and assessing these aspects remain challenging. Drawing from student perceptions and recommendations, HEIs can enhance their curriculum and facilitate students' transition into their practice (Casey et al., 2011). Additionally, establishing a feedback system within HEIs is crucial (Payne et al., 2008), allowing students to express their concerns about entering the new workforce.

The above studies have highlighted the relevance of awareness, confidence, and readiness required to be successful in future. However, the role of HEI in influencing these remains understudied. Therefore, this study will add to the current knowledge on the role of HEIs in raising awareness, confidence, and readiness of students to become a successful

workforce in the future. The future workforce by 2030 will be represented by automated workplaces, netizens as the workforce, and the world as a whole as a job market (Frey and Osborne, 2017). Artificial intelligence, robotics, virtual reality, machine learning, augmented reality, and further development in the fourth industrial revolution have already initiated the transformation in the workplace (Mathijssen et al., 2015; Bhattacharyya, 2017; Bhatia, 2018; Anderson, 2019; Pandya and Janahi, 2021). As the world thrives in the Fourth Industrial Revolution age marked by the adoption of more complex automation technologies and accelerating innovation, the fundamental question that has re-emerged among workers, business leaders, policy-makers and the broader public around the globe is the future of the workplace (Annunziata and Rostom, 2016). The pandemic of COVID-19 has accelerated the pace of this transformation manifold compared to what was anticipated in earlier studies (Camp et al., 2020). The question then arises from this narrative is that - Are the current students, who will be in the workforce of 2030, actually confident to work in this rapidly transforming workplace and ever-evolving technologies? Furthermore, does HEIs have any role in building confidence amongst students? This section provides a narrative review of literature sourced from the institutional library and prominent education research databases, including Ebsco, ProQuest, ERIC, Web of Science, Scopus, and Google Scholar. Scholarly articles, books, reports and content from official websites were systematically reviewed to establish the theoretical foundation for this study. The focused review aimed to explore concepts and theories pertaining to students' confidence in working in the future and the role of HEIs in influencing this confidence.

2.1 Concepts, models, and theories addressing confidence to work in the future

García-Aracil et al. (2021) and Mahmud and Wong (2022b) study show that HEI graduates perceive under-preparation for future work, as the competencies required for future work are not completely integrated into the curriculum. Caballero and Walker (2010) posited that employers emphasize on work readiness of a graduate in the selection criterion and authors advised HEIs to prepare students with competencies demanded by the job market. This entails HEIs to stay abreast with the job market requirements in future and build the confidence of students to work in the future. Pandya et al. (2020) postulated the necessity for HEIs to develop knowledge competencies, skill competencies, ability competencies and competencies to perform in the era of Artificial Intelligence. These competencies are crucial for students to become successful workforce of the future. The authors discussed the vision of the workplace and workforce in light of the displacement of current jobs with new jobs by 2030. The study found that nearly 40% of students in HEIs are not confident about possessing the required competencies for future work. Their confidence is low concerning the future world of work due to uncertainty as to their HEI preparing them for this new dynamic. The authors set the direction for studying the interrelationships between the following three dimensions, in context of the future world of work, – awareness about future work; readiness for future work; and confidence to work in the future work and if HEI plays any role in influencing these dimensions. Our study undertook this direction to determine if HEIs impact the awareness, readiness and confidence of students.

Tanius and Susah (2015) suggest that HEIs should develop curricula matching the supply and demand of talent in the industry. Mashigo (2014) posited that graduates are less confident as they are incompetent to face challenges in the new work environment. Makki et al. (2015) study found a positive significant relationship between work readiness skills, career self-efficacy and career exploration among graduate students. Tentama et al. (2019) found that the higher the student's confidence and hardiness, the better the work readiness.

Schembari (2018) found that there was little or no relationship between anticipated person-job fit and the role of HEI in raising confidence. Prikshat et al. (2019) argue that even though work readiness is an important factor in understanding the transition of graduates from education to work, confidence must be shaped by HEI to orient the graduates according to their needs. Fenech et al. (2019), posited that the perceived work readiness of female Emirati graduating students is a positive perception; however, graduating students perceive that they are the least work-ready concerning skills related to their personal development, confidence and stress management (personal work characteristics).

2.2 Social cognitive career theory

Social cognitive career theory (SCCT) developed by Lent et al. (1994) delineates three interrelated facets of career development: (1) how basic academic and career interests develop, (2) how educational and career choices are made, and (3) how academic and career success is obtained. This theory affirms that an individual's internal cognitive and affective states, coupled with external environmental factors and overt behaviors, mutually influence one another (Kelly, 2009; Doe, 2015). SCCT incorporates diverse concepts such as interests, abilities, values, and environmental factors derived from earlier career theories, thus influencing overall career development. Rooted in Bandura's general social cognitive theory (1986), which explores cognitive and motivational processes across various psychosocial domains, SCCT has found widespread application in research. Scholars have employed SCCT to investigate aspects of career development, career choices, academic success, the prediction of self-goals, and future aspirations (Segal et al., 2002; Ali and Saunders, 2006; Lent et al., 2010). Doe (2015) embraced Social Cognitive Career Theory (SCCT) from Bandura (1986) to elucidate the connection between work readiness and success in the workplace.

2.3 Self-efficacy theory

Bandura (1977) introduced the concept of self-efficacy, defining it as an "individual's belief in his capacity to execute behaviors necessary to produce specific performance attainments" (p. 3). Lent et al. (2010) discussed that self-efficacy beliefs stem from four primary sources of information: personal performance accomplishments, vicarious experiences (e.g., observing similar others), social persuasion and physiological and emotional states. They further identified self-efficacy beliefs, outcome expectations and personal goals as three building blocks that regulate an individual's career behavior. In terms of future career-related behaviors, a person's self-efficacy beliefs will enable the future workforce to judge his capacity

to not only organize but to implement various actions to arrive at a goal.

Van Dinther et al. (2011) postulated that HEIs can influence students' self-efficacy, stating that "80% of the intervention studies across several types of study and across several domains demonstrated a significant relation between an intervention programme and students' self-efficacy" (p. 104). Further, Arico (2014) presented that academic self-efficacy has a direct impact on the student's confidence level. Academic self-efficacy is defined as a motivational variable whereby a student's performance can be predicted (Kim et al., 2018).

According to SCCT and the social cognitive theory, persons' engagement in activities, the effort and persistence they invest, and their ultimate success are partly determined by both their self-efficacy beliefs and outcome expectations. Bandura (1977, 1986) explains that outcome expectations refer to beliefs about the consequences or outcomes of performing particular behaviors. Though SCCT focuses on career development, it assumes that people are likely to become interested in, choose to pursue and perform better at academic activities at which they have strong self-efficacy beliefs as long as they also have the necessary skills and environmental support to pursue these activities. These skills and competencies are developed at their respective higher education institutions. Moreover, students' outcome expectations are key to their success in the future world of work.

2.4 Role of higher education institutions in developing confidence to work in the future

AACU (2015) and Manyika et al. (2017) advocate for HEIs to cultivate skills not only for current job roles but also for the evolving demands of future work. This encompasses future skills such as virtual competencies (Pandya, 2019), awareness of the trending realities in the relevant field, building technical and innovative capabilities, understanding of various disciplines, and building the right attitude toward work. For the development of the future workforce, the neoliberal higher education systems are transforming into a blend of a business school and a start-up incubator (Gannaway et al., 2013; Hameed et al., 2016).

Lozano et al. (2012) and Salas Velasco (2014) propose a capabilities approach for HEIs to design curricula, aiming to equip students with competencies for the future. However, the capability is just one facet of the KSAO, which may not comprehensively address the holistic development of students. They also understudied the future context, which this study focuses on. Boyer and Bucklew (2019) emphasized competency-based education and proposed HEIs to focus on "course/program catalogues, class/schedule building, and term/sub-term timeframes" to develop future generations by utilizing an interplay between future technologies and education systems while retaining the focus on individual students (p. 1, p. 18). However, these studies highlight the role of HEIs in developing competencies for the present but understudy the evolving technologies that will evolve in future.

3 Research model and methods

Our conceptual framework is structured upon the Social Cognitive Career Theory (SSCT) and Self-efficacy Theory (Bandura,

1977) as HEIs must prepare their students for the future world of work. However, at the same time, students themselves must be cognitive and confident of the competencies required to be ready for this very challenging future workplace and develop their careers based upon these constructs.

3.1 Objectives and hypotheses

Based on the results and findings of the previous research study (Pandya et al., 2020), it was found that students perceived that they lacked confidence in the future of work. From this finding and grounded upon the themes and concepts discussed in the literature review specifically the SSCC theory and the Self-efficacy Theory above, this research was based on five hypotheses specifically HEI students' awareness, readiness and confidence for the new world of work in 2030.

H1: Higher levels of preparation at HEI has a positive effect on a student's awareness of the new world of work in 2030.

H2: Higher levels of preparation at HEI has a positive effect on a student's perceived readiness to work in the new world of work in 2030.

H3: Higher levels of preparation at HEI has a positive effect on a student's confidence to work in the new world of work in 2030.

H4: Greater awareness of future work has a positive effect on a student's confidence to work in the new world of work in 2030.

H5: Higher levels of perceived readiness for future work has a positive effect on a student's confidence to work in the new world of work in 2030.

3.2 Research design and context

A research model was formulated and validated to analyse the role of HEIs in fostering student awareness, readiness, and confidence for the workforce of 2030 (Figure 1). The dataset comprised perceptions collected from 190 students across the world using an online survey.

3.3 Instrumentation

The research model was validated through a quantitative investigation using an online survey instrument. The survey questionnaire comprised questions on demographics including age, gender, and country of residence, and psychographic questions related to different constructs in the research model. For each competency domain (Knowledge, Skills, Abilities and Other Characteristics), four items (on a 5-point Likert scale) were used to measure perceptions of students on their awareness

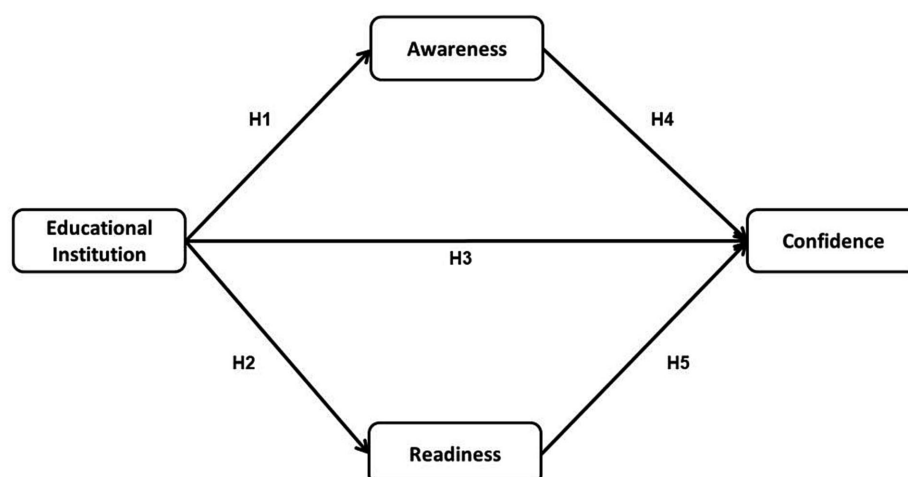


FIGURE 1
Research model determining HEIs role in influencing confidence to work in future.

of work in 2030, readiness to work in 2030, confidence to work in 2030, and also enquired if they perceive that their HEI has been preparing them to be professionally successful in 2030.

The questionnaire items were assessed for face validity through consultations with other research experts at the authors' institutions, and construct validity for each theoretical construct was assessed through exploratory factor analysis (EFA) of the pilot survey responses ($n = 22$).

Responses to demographic questions were analyzed using descriptive statistics, and testing of research model constructs and hypotheses was conducted through EFA and partial least squares (PLS) path modeling techniques. Descriptive statistics assist in classifying the data, describing the findings, determining relationships, and indicating relations among different aspects (Mertens, 2010). The PLS approach was selected for this study due to its suitability for small-sample exploratory research (Gefen et al., 2000), and its flexibility with multivariate normality assumptions (Thomas et al., 2005).

The sampling techniques used were primarily convenience and self-selection-based. As this study was exploratory, the researchers adopted convenience, snowball sampling methods, and distributed the survey through their professional networks. This network included faculty members from the authors' current and past HEIs and LinkedIn connections. Furthermore, a call of request was made to the network to extend the survey further to their respective peers to disseminate the survey link to their students. The research purpose, data collection procedures, privacy and confidentiality, conservation of data, secondary use of data, potential harms or risks, potential benefits and consent for voluntary participation were undertaken at the beginning of the survey. Research Ethical and Integrity guidelines were administered throughout the project. The data was collected during the Spring semester of 2020. To ensure a diverse selection of respondents, our sampling frame included respondents from all types of fields such as engineering, sciences, technologies, arts, commercial work, trading, and the like. The minimum sample

size heuristic for PLS studies (Chin, 1998; Chin and Newsted, 1999) was utilized for *a-priori* calculation of the required sample size. Using this heuristic, the minimum target sample size for this study was determined to be 40 valid responses.

4 Results

A total of 260 responses were collected from across the various sources contacted for potential participation in our study. After discarding partial responses, 190 responses were retained for further analysis. This exceeded our minimum sample size target as specified above. Our analysis results are outlined in the next subsections.

4.1 Participants profile

Table 1 provides a summary of basic demographic information from the survey responses that were analyzed. A significant proportion of respondents were single (72%), males (70%), between the age group of 18–24 years (66%), enrolled in undergraduate programs (63%), studying in the UAE (80%). The majority of the participants were from the Business management program (56%).

4.2 Measurement model assessment

Following the two-step approach for Structural equation modeling analysis (SEM) suggested by Anderson and Gerbing (1988) an examination of the measurement model was conducted before testing the structural model. The measurement model was assessed through a combination of EFA procedures and various tests for discriminant and convergent validities for the constructs in the research model.

We inspected the loadings and cross-loadings of indicators as presented in Table 2. The highest loading for each measurement item (shown in bold) corresponds with its respective latent variable. As

TABLE 1 Demographic profile of participants.

Demographic factors		Frequency	Percentage	Demographic factors		Frequency	Percentage
Gender	Male	133	70%	Highest level of education	Higher diploma	18	10%
	Female	57	30%		Bachelor's degree	120	63%
Age (yrs.)	16–18	2	1%		Master's degree	31	16%
	18–24	126	66%		Doctorate degree	17	9%
	25–34	34	18%	Program of study	Professional degree	4	2%
	35–44	15	8%		Architecture	1	1%
	45–54	10	5%		Arts	3	2%
	55–64	1	1%		Business	107	56%
	65–74	2	1%		Computer sciences	9	5%
Marital Status	Single	137	72%		Data analytics	2	1%
	Married	37	19%		Education	6	3%
	Others	16	9%		Engineering	3	2%
Country of residence	Argentina	1	1%		Information Technology	19	10%
	Canada	1	1%		Language/Literature	3	2%
	China	1	1%	Nursing	1	1%	
	India	8	4%	Psychology	1	1%	
	Indonesia	2	1%	Social Sciences	3	2%	
	Malaysia	2	1%	Sociology	3	2%	
	Nigeria	2	1%	Others	15	8%	
	Singapore	1	1%	Not mentioned	14	7%	
	S. Korea	19	10%				
	UAE	152	80%				
	USA	1	1%				

shown in the table, the loading values of a measurement item on its associated target construct were higher in comparison to the item's cross-loadings on other model constructs, and the substantive loading of each item on its construct exceeds the recommended threshold of 0.70, hence indicating item reliability and discriminant validity (Chin, 1998).

Various tests of convergent validity were performed through an assessment of quality indices as shown in Table 3. The average variance extracted (AVE) or the communality index represents the proportion of variance captured by a construct from its indicators. This value for each construct is higher than 0.5 indicating adequate convergent validity. The values of Cronbach's alpha are in the range of 0.60 or higher, further demonstrating the internal reliability consistency of each construct (Gefen et al., 2000). Lastly, the composite reliability values for each construct indicates the internal consistency reliability of a construct in comparison with other constructs. As shown in Table 3, these values are higher than 0.70, satisfying the suggested cut-off for internal reliability consistency of each construct relative to all other constructs in the model (Fornell and Larcker, 1981).

4.3 Structural model assessment

The psychographic model posited student awareness and readiness as cognitive factors comprising the predictor variables, and student confidence as the affective construct representing the endogenous dependent variable. Exploratory Factor Analysis (EFA) and Partial Least Squares (PLS) based structural equation modeling (SEM) procedures were used to estimate a structural model of these cognitive and affective factors, and the combined effect of educational institution, awareness, and readiness on overall student confidence in their knowledge, skills and abilities.

EFA and PLS based SEM procedures were used to estimate a structural model of the cognitive and affective factors in the research model, and the combined effect of educational institution, awareness, and readiness on overall student confidence in their knowledge, skills and abilities.

To estimate the structural model, the PLS procedure with bootstrapping using 1,000 re-samples was used. The structural model and the *p*-values are presented in Figure 2 with path beta coefficients depicted along each path. Four of the five hypotheses were supported

TABLE 2 Matrix of loadings & cross-loadings for discriminant validity assessment.

Measurement items	Model constructs			
	Awareness	Confidence	Educational institution	Readiness
A1	0.796	0.711	0.516	0.668
A2	0.776	0.513	0.625	0.639
A3	0.854	0.67	0.529	0.718
A4	0.834	0.605	0.72	0.732
C1	0.721	0.883	0.639	0.656
C2	0.73	0.877	0.689	0.681
C3	0.681	0.885	0.666	0.675
C4	0.719	0.861	0.649	0.686
E1	0.674	0.678	0.896	0.724
E2	0.635	0.648	0.872	0.696
E3	0.663	0.682	0.915	0.721
E4	0.664	0.664	0.858	0.703
R1	0.653	0.633	0.585	0.842
R2	0.712	0.601	0.642	0.785
R3	0.667	0.61	0.703	0.844
R4	0.724	0.663	0.73	0.84

TABLE 3 Validity and reliability assessment of the measurement model.

Model constructs	Validity and reliability indicators		
	Average variance extracted (AVE)	Composite reliability	Cronbach's alpha
HEI	0.785	0.936	0.908
Awareness	0.643	0.878	0.813
Readiness	0.686	0.897	0.847
Confidence	0.786	0.930	0.899

with high degrees of confidence, and the model demonstrated to be a good predictor of student confidence to work in the new world of 2030 (R^2 value of 0.79 for this construct). These results are summarized below.

A significant relationship was validated between HEI preparation and students' awareness of the new world of work (H1 supported). HEI preparation also had a significant positive effect on students' perceived readiness to work in the new world (H2 supported). However, no direct significant association was found between HEI preparation and student confidence to work in the new world (H3 not supported). This direct relationship may be fully mediated through awareness and readiness which both have a significant direct positive relationship with student confidence to work in the new world of 2030 (H4 and H5 supported).

The R^2 values suggest that the model performed well for the dependent variables pertaining to awareness, readiness, and confidence. All dependents in the model compellingly exceed the minimum threshold of 0.10 indicating the usefulness of that variable

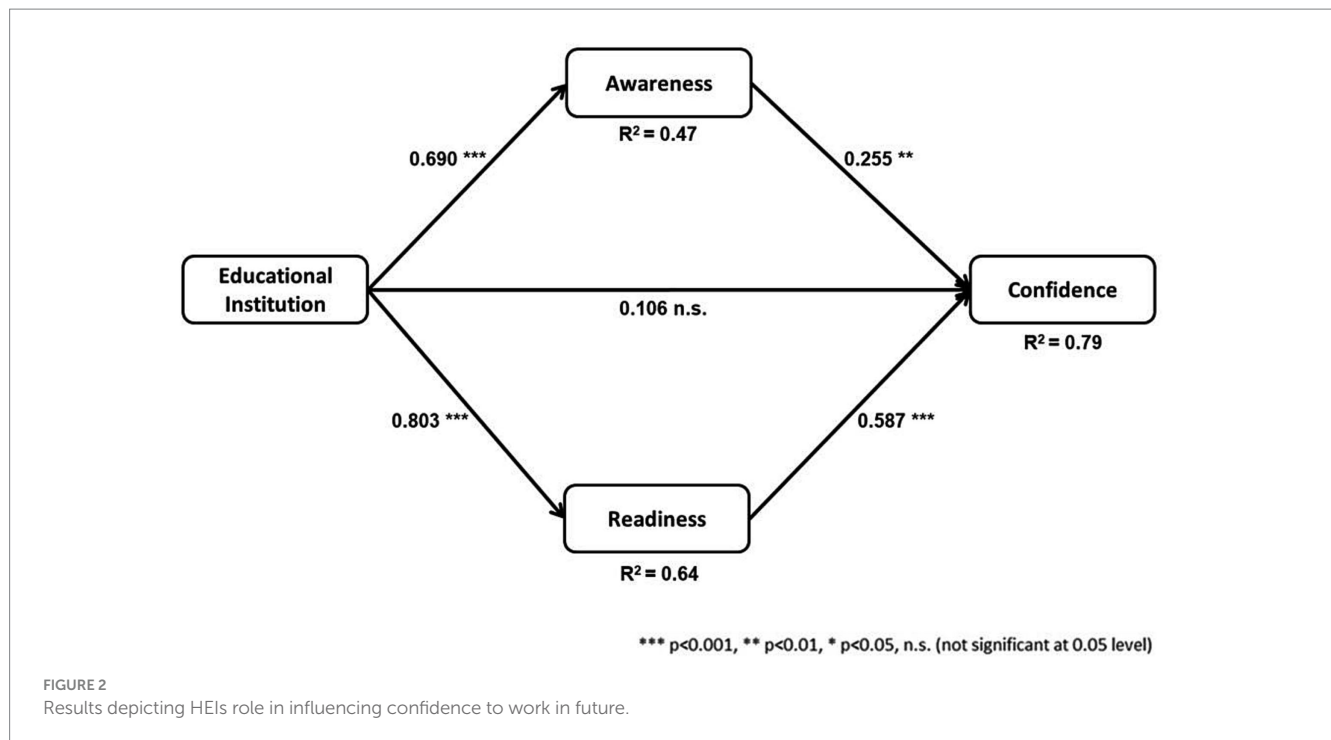
in the model (Falk and Miller, 1992). In terms of the principal downstream variable in the model, i.e., student confidence to work in the new world in 2030, a significant portion of its variance (around 79%) can be explained by the posited research model.

5 Discussion and recommendations

The findings of this study suggest that the HEIs play a significant role in influencing the awareness, readiness, and confidence of their students to work in the new world of work in 2030. Statistical results indicate that HEIs indirectly impact students' confidence levels by influencing their awareness and readiness for future world of work. The model presented demonstrated strong predictive capabilities in determining the constructs that affect students' confidence to work in the new world of 2030. The observed strong and significant relations between HEI-Awareness; HEI-Awareness-Confidence; HEI-Readiness; and HEI-Readiness-Confidence and these dependencies are not just by chance.

The findings align with the findings from the research project carried out by Pandya et al. (2020) wherein more than 40% of students believed that their HEI had made them aware of the competencies required for the new world of work. Further, around 45% of students believed that their HEI has prepared them by developing their knowledge, skills, abilities, and other characteristics. Moreover, 67% of students expressed confidence in building their competencies for the future, with 35% acknowledging no role played by their HEI in fostering such confidence. This study statistically establishes that HEI influences students' confidence in future work through their impact on awareness and readiness to work in future.

Drawing on the Social Cognitive Career Theory (SCCT) and three aspects of career development proposed by Lent et al. (1994), our



findings support previous research by Bandura (1977, 1986) whereby outcome expectations (self-confidence) can refer to students' beliefs about the consequences or outcomes of them performing particular behaviors. SCCT is based on career development where students are more likely to become interested in, choose to pursue and perform better at academic activities if they have strong self-efficacy beliefs. Our findings have shown this link to the Self-Efficacy Theory (Bandura, 1977) with the caveat they must possess the required skills and environmental support for these academic activities, developed at their HEIs (Van Dinther et al., 2011; Arico, 2014). We can interpret that HEIs can groom students for the future. This can be done by offering them programs compatible with the requirements of the new world of work; accordingly developing their competencies; and raising awareness and creating interest in new careers (Payne et al., 2008; Casey et al., 2011; Maxwell et al., 2016; Hoover et al., 2018). Further, HEIs can provide an engaging learning environment to influence the students' cognitive, affective, and behavioral states (Doe, 2015). As suggested in Self-efficacy Theory, such influences by HEIs will alter students' beliefs in their academic capacity (Bandura, 1977), build their motivational levels (Kim et al., 2018) to attain their career objectives, and in turn, build their confidence to work in the new world of 2030.

6 Conclusion, limitations, and future research

In investigating the influence of HEIs on the competencies required, we have ascertained that educational institutions play a crucial role in fostering students' confidence by cultivating awareness of future competencies and facilitating their development. The

primary limitation of this study lies in its sample size, predominantly comprising participants from Business programs at HEIs in the UAE. Our future research endeavors will aim for larger and more diverse datasets, encompassing participants from various countries and academic programs to enhance the generalizability of findings. Despite this limitation, the results of our research hold significant implications for higher education policy developers and curriculum designers, urging the incorporation of future competencies into educational programs. Additionally, educators and researchers can leverage these findings to formulate effective teaching strategies and content, thus equipping the future workforce for 2030. In the next phase of this project, we plan to expand our scope to include perspectives of educators and industry experts worldwide. This extension aims to provide insights into the role of educators and HEIs in shaping awareness, readiness, and confidence among students, thereby contributing to the development of a successful future workforce.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical approval was not required for the study involving human participants in accordance with the local legislation and institutional

requirements. Written informed consent to participate in this study was not required from the participants in accordance with the national legislation and the institutional requirements.

Author contributions

BP: Conceptualization, Data curation, Project administration, Writing – original draft. UR: Formal analysis, Methodology, Writing – original draft. LP: Funding acquisition, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. This research project is supported by a seed grant from the American University of Ras Al Khaimah, UAE.

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Acknowledgments

The authors want to thank the students who participated in the study.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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