



Saudi Index for the Employment, Empowerment, and Inclusion of Persons with Disabilities

Dr. Hiam M. Alaoufi

Assistant Professor, Department of Teaching and Learning
College of Education and Human Development
Princess Nourah bint Abdulrahman University, KSA
HMAlaoufi@pnu.edu.sa

Dr. Reem A. Alabdulwahab

Assistant Professor, Department of Teaching and Learning
College of Education and Human Development
Princess Nourah bint Abdulrahman University, KSA
raalabdulwahab@pnu.edu.sa

Dr. Huda M. Alshanbari

Associate Professor, Department of Mathematical Sciences
College of Science, Princess Nourah bint Abdulrahman University, KSA
hmalshanbari@pnu.edu.sa

Dr. Nourah F. Alshalhoub

Assistant Professor, Department of Teaching and Learning
College of Education and Human Development
Princess Nourah bint Abdulrahman University, KSA
nfalshalhoub@pnu.edu.sa

Dr. Sadeem A. Alolayan

Assistant Professor, Department of Teaching and Learning
College of Education and Human Development
Princess Nourah bint Abdulrahman University, KSA
SAAAolayan@pnu.edu.sa

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Abstract

For persons with disabilities, accessing work opportunities is a human right. However, accurate and sustainable data on their participation and inclusion within the workforce in the Kingdom of Saudi Arabia (KSA) is almost non-existent. This study proposes the *Saudi Index for the Employment, Empowerment, and Inclusion of Persons with Disabilities (SIEEIPD)* to assess the implementation of employment rights for PWDs, with specific indicators addressing the inclusion of women with disabilities. The index offers the governmental and the organizational sectors an evaluation tool to measure workforce accessibility and integration efforts. The development of the SIEEIPD followed a structured, multi-step framework for constructing composite indices. The initial phase involved data collection and an analysis of existing employment practices for persons with disabilities (PWDs). This was followed by a comprehensive literature review, which included an examination of best practices and global indicators, guiding the selection of the main and sub-domains for the index. Expert reviews were then conducted to ensure both conceptual and methodological soundness of the index domains. Subsequently, face validity assessments and an exploratory evaluation were employed to determine the index's comprehensiveness and relevance. To assess the index's validity and reliability, a pilot study was carried out with 12 entities, utilizing a four-category classification framework. The findings confirmed the reliability of the index in the pilot phase, with its validity and reliability expected to improve with a higher response rate. The study recommends that the SIEEIPD be adopted and managed by an independent government body to ensure its sustainability and long-term impact.

Keywords: Disability; employment; inclusion; rights; workforce; policies.

المؤشر السعودي لتوظيف وتمكين وإدماج الأشخاص ذوي الإعاقة

د. هيام محمد العوفي

أستاذ مساعد، قسم التعليم والتعلم، كلية التربية والتنمية البشرية
جامعة الأميرة نورة بنت عبد الرحمن، المملكة العربية السعودية

HMAlaoufi@pnu.edu.sa

د. ريم عبد الوهاب العبد الوهاب

أستاذ مساعد، قسم التعليم والتعلم، كلية التربية والتنمية البشرية
جامعة الأميرة نورة بنت عبد الرحمن، المملكة العربية السعودية

raalabdulwahab@pnu.edu.sa

د. هدى محمد الشنبري

أستاذ مشارك، قسم العلوم الرياضية، كلية العلوم
جامعة الأميرة نورة بنت عبد الرحمن، المملكة العربية السعودية

hmalshanbari@pnu.edu.sa

د. سديم عبدالله العليان

أستاذ مساعد، قسم التعليم والتعلم، كلية التربية والتنمية البشرية
جامعة الأميرة نورة بنت عبد الرحمن، المملكة العربية السعودية

SAAAlolayan@pnu.edu.sa

د. نورة فهد الشلهوب

أستاذ مساعد، قسم التعليم والتعلم، كلية التربية والتنمية البشرية
جامعة الأميرة نورة بنت عبد الرحمن، المملكة العربية السعودية

nfalshalhoub@pnu.edu.sa

المستخلص:

يُعدّ الوصول إلى فرص العمل حقًا إنسانيًا للأشخاص ذوي الإعاقة. ومع ذلك، فإن البيانات الدقيقة والمستدامة حول مشاركتهم وإدماجهم في سوق العمل في المملكة العربية السعودية تكاد تكون غير متوفرة. تسعى هذه الدراسة إلى اقتراح المؤشر السعودي لتوظيف وتمكين ودمج الأشخاص ذوي الإعاقة (SIEEIPD)، وذلك لتقييم مدى تنفيذ حقوق التوظيف لذوي الإعاقة، مع التركيز على مؤشرات خاصة بإدماج النساء ذوات الإعاقة. يوفر هذا المؤشر أداة تقييم للقطاعات الحكومية والخاصة، تمكّنها من قياس مدى إمكانية الوصول إلى سوق العمل، إضافةً إلى جهود الدمج والتمكين المبذولة. تم تطوير المؤشر السعودي لتوظيف وتمكين ودمج الأشخاص ذوي الإعاقة وفق منهجية علمية متعددة المراحل لبناء مؤشر مركب. شملت المرحلة الأولى جمع البيانات وتحليل الممارسات الحالية في توظيف الأشخاص ذوي الإعاقة. تلى ذلك مراجعة شاملة للأدبيات، تضمنت دراسة أفضل الممارسات العالمية والمؤشرات الدولية، مما أسهم في تحديد المجالات الرئيسية والفرعية للمؤشر. كما خضع المؤشر للتحكيم من قبل خبراء لضمان دقة الإطارين المفاهيمي والمنهجي في تحديد مكوناته. ومن ثم، تم تقييم الصدق الظاهري للمؤشر، إلى جانب تقييم استكشافي لقياس شمولية المؤشر وملاءمته. وللتأكد من مدى مناسبة المؤشر وثباته، أُجريت دراسة استطلاعية شملت 12 جهة، واعتمدت إطار تصنيف مكونًا من أربع فئات. وأظهرت النتائج الأولية موثوقية المؤشر في المرحلة الاستطلاعية. وتوصي الدراسة بأن تتولى جهة حكومية مستقلة تبنّي هذا المؤشر وإدارته لضمان استدامته وتعزيز أثره على المدى الطويل.

الكلمات المفتاحية: الإعاقة، التوظيف، الإدماج، الحقوق، سوق العمل، السياسات.

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Introduction:

Employment is one of the crucial components that together form citizenship. It has been recognized as a behavior that ensures the stability of the social and psychological performance of tasks (Takeuchi, Bolino & Lin, 2015). It is the most prominent feature of a person's self-sufficiency, and for PWDs, this issue is even more crucial as employment provides self-economic sufficiency, independence, community engagement, and opportunities to enhance their capabilities and improve their overall quality of life (National Center for Social Studies, 2021). The framework ensuring PWDs' employment is grounded in the United Nation's (UN) Convention on the Rights of Persons with Disabilities (UNCRPD) which addresses PWDs' rights to actively participate in the labor market through several actions. Since the ratification by KSA of the UNCRPD, many initiatives have been taken to ensure equality for PWDs in the workplace to ensure a dignified life. Furthermore, Saudi Vision 2030 has adopted essential elements of the UNCRPD to ensure the actual realization of PWDs' employment rights (Alsalem & Basham, 2017; Saudi Vision 2030, 2021). However, PWDs face several challenges that impact their full employment participation in the workplace, due to the influence of several factors, including employers' low expectations regarding PWDs' capabilities to perform work tasks, minimal execution of laws and regulations, insufficient support, ineffective communication, and environmental barriers (Opoku et al., 2017; Relja et al., 2018). Therefore, there is a fundamental need for effective tools and monitoring methodologies to ascertain progress, measure outcomes of the programs, and fully understand how PWDs are performing in the labor market.

The proposed Index was built to realize the goals of several international frameworks designed to guide efforts to employ, empower, and include PWDs, such as: the UNCRPD, and the 2030 Agenda for Sustainable Development (SDG). The UNCRPD entered into force in 2008 and has been ratified by 177 states. Article 27 of the Convention on work and employment states that "parties recognize the right of PWDs to work on an equal basis with others; this includes the right to the opportunity to gain a living by work freely chosen or

accepted in a labor market and work environment that is open, inclusive, and accessible to persons with disabilities” (p. 19). The 2030 Sustainable Development (2015) pays significant attention to PWDs, particularly in its Sustainable Development Goal (SDG) 8 on Decent Work and Economic Growth, which makes explicit reference to PWDs in target 8.5. SDG 10 aims at empowering and promoting the social, economic, and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion, or economic or other status. These SDGs guide the practices of countries and the international community in ensuring employment for PWDs. The United Nations Disability Inclusion Strategy (2018) is designed to help countries to achieve the 2030 Agenda for Sustainable Development. This strategy includes a system-wide policy, an accountability framework, and other implementation modalities to ensure responsive, inclusive, participatory, and representative decision-making at all levels by 2030. Many declarations and resolutions concerning PWDs have been issued. Although these declarations are not subject to ratification, they are intended to have a wide application, and contain symbolic and political undertakings by member states, the most prominent of which are the Vocational Rehabilitation and Employment (Disabled Persons) Convention (No. 159) and the Disability Inclusion Strategy and Action Plan 2014-17.

To develop a set of indicators which can be used to evaluate disability employment participation within the Saudi workforce, it is essential to acknowledge how the term “disability” is understood in this particular context. The Saudi Disability Welfare Law (2000) defines a person with a disability as “Any person suffering from a permanent, total or partial, impairment affecting his senses, or his physical, mental, communicative, learning, or psychological abilities, to an extent that reduces his ability to perform daily activities compared to a non-disabled person”. The Ministry of Human Resources and Social Development (HRSD) further provides a description of a person considered as an employee with disabilities: “A person with a disability in the labor law means each and every person who, according to a medical report issued by the Ministry of Health or hospitals in other government sectors, or according to one of the identification cards issued by the HRSD means that he/she has one or more of the following disabilities: (visual disability, mental disability, physical disability, motor disability, learning difficulties, speech difficulties, behavioral disorders, emotional disorders, autism) or any other

disability that requires the provision of any form of accommodation.” Both definitions are underpinned by the medical approach, where the focus is on the person’s impairment, with limited consideration of other social barriers. One aspect to promote the inclusion of PWDs in the workplace is to identify the environmental and social barriers that may hinder their full participation. In developing the SIEEIPD, the UNCRPD definition was also adopted to describe disability. According to UNCRPD (2006): “Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others” (UNCRPD, 2006). In this regard, disability is considered to arise from the interaction of physical and mental conditions with environmental and social factors. This paper aims to set out the process of developing the indicators, although highlighting how disability is defined within this particular context is imperative.

PWDs in Saudi Arabia

KSA is a signatory to the UNCRPD and a forerunner in realizing sustainable development globally, starting with Saudi society itself, especially since SDGs align with Saudi Vision 2030. A synthesis conducted by the Organization for Economic Co-operation and Development (OECD) (2018) found that the participation of PWDs in the workforce helped to reduce their social isolation, increase their household earnings, and improve overall economic performance. However, at the same time, international reports have demonstrated that PWDs are less likely to be employed compared to those without disabilities. Indeed, the reports above specifically illustrated that among other G20 countries, KSA was less likely to employ PWDs compared to individuals without disabilities. The latest Saudi disability statistics published by the General Authority for Statistics (GASTAT) in 2017 showed that PWDs made up 7.1% of the Saudi population, where 3.7% were male and 3.4% were female. The statistics also revealed that 40.8% of males were employed compared to only 8% of females.

The UN Disability and Development report (2018) highlighted that PWDs have limited access to the workplace. According to the report, the employment-to-population ratio for PWDs aged 15 years and older was 36%, significantly lower than the 60% unemployment rate within this group. Additionally, the report reveals a gender difference, with women with

disabilities being less likely to secure employment compared to men with disabilities. These figures prompted researchers and human rights activists to investigate the factors associated with low disability employment. According to the UNCRPD Saudi Report (2015), Saudi PWDs face challenges that hinder their participation in the workforce, which includes transportation, accessibility, social and attitudinal/behavioral barriers, employers, education, limited training opportunities, and the lack of a unified system.

These challenges are not limited to the Saudi context, as the UN's Disability and Development Report (2018) revealed in its review of accessibility factors, in which an inaccessible workplace was found to be a hindrance to the employment of PWDs. In eight developing countries, 32% of PWDs claimed that their workplaces were inaccessible, and that reasonable accommodations and assistive technology were limited. Darcy, Taylor & Green (2016) analyzed complaints of discrimination against PWDs that were submitted to the Australian Human Rights Commission under the Australian Disability Discrimination Act 1992. Many emergent employment discrimination themes were identified, such as disability type, access to premises, human resource mismanagement, selection processes, the integration of assistive technology, perceptions of the cost of disability, and inflexible workplace practices. The Saudi Human Rights Commission has therefore published a digital form on its website that enables individuals, including PWDs, to report complaints relating to any kind of human rights violation, including discrimination. It is important to note, however, that studies examining such complaints remain limited.

Additionally, conventional national education and vocational training do not prepare PWDs for employment. Most existing training programs for PWDs usually lack a vocational focus or focus on skills that are not in demand in the labor market. Alajmi and Albatal (2015) found that individuals with intellectual disabilities were less likely to be employed due to lacking the skills that jobs require. This also applies to persons who have vocational abilities but are unable to fully function due to an acquired impairment that requires vocational rehabilitation.

Additional obstacles stem from business sector assumptions, which reflect the mentality of broader society. Despite research demonstrating the benefits of employing PWDs as part of a diverse workforce and the negligible expenses required to make workplace adaptations, many companies still believe that PWDs are less productive than individuals without disabilities. Individuals with mental health issues are disproportionately affected by such negative attitudes, which could cause them to conceal their situation, preventing them from requesting workplace adaptations. The Saudi National Center for Social Studies (2021) identified limited empowering tools, lack of awareness of disability employment issues, inadequate statistics due to the absence of a database about PWDs, and the scarcity of supportive workplaces as primary challenges pertaining PWDs' employment.

Efforts to increase the employment rate of PWDs are evident in the 2023 Annual Report of the Authority for the Care of Persons with Disabilities, which indicates an increase in employment from 7.7% (as reported in the Saudi Government Budget Report, 2022) to 12.6%. Yet there is a need for a clear accountability framework to achieve that goal. The challenges outlined above, acting in combination, deter many PWDs from entering or remaining in the Saudi workforce. In challenging labor markets in particular, PWDs often refrain from pursuing vocational or higher education.

Article 27 of the Saudi Basic Law of Governance states that “The State shall guarantee the right of the citizen and his family in emergencies, sickness, disability, and old age, and shall support the social security system and encourage institutions and individuals to contribute to charitable work”. This article guides the policies, procedures, employment programs, and initiatives in support of the employment of PWDs.

The Saudi Disability Welfare Law came into force in 2001. This law includes 16 articles that maintain the rights of PWDs in relation to accessibility, education, health, work, training, social security, and cultural and sports activities. It also emphasizes the importance of coordination among all stakeholders to ensure the effective implementation of the law.

The HRSD oversees the public and private sectors in KSA and ensures compliance with Labor Law regulations passed through a Royal Decree in 2005. The Labor Law provides public and private sector employers with regulations

and procedures to achieve compliance with the Law. To ensure that PWDs are included in the workforce, regulations explicitly identify the adaptations, accommodations, and other auxiliary tools that must be available in workplaces for each disability category. Additionally, the Ministry provides support to ensure that PWDs can enter the workforce and realize their maximum potential through several programs and initiatives such as Tawafuq, Mowaamah, and Nitaqat. The Tawafuq program is one of those initiatives that aims to provide job opportunities for PWDs within the private sector and to provide them with professional consultation, support, and guidebooks. Mowaamah is a licensing system that ensures accessible work environments by adapting standards and practices to promote accessibility. Nitaqat is an incentive program that encourages enterprises to localize jobs through a points system. Workplaces who hire PWDs earn points, which is equivalent to hiring four employees without disabilities.

Saudi Vision was launched in 2016. It specified disability rights in the statement: “We will also enable those of our people with disabilities to receive the education and job opportunities that will ensure their independence and integration as effective members of society”. The National Transformation Program (NTP) and the Human Capability Development Program (HCDP) serve as vehicles for the realization of the Vision 2030 goals for PWDs. Both programs emphasize the integration of PWDs in the workforce by improving supportive policies and legislation and developing employment and rehabilitation programs. One of the significant outcomes of the NTP has been the establishment of the Authority for Persons with Disabilities in 2018. The aim of this authority is to eliminate discrimination, organize efforts, and establish a holistic institutional ecosystem to address all obstacles in the way of the full inclusion of PWDs (APD, 2020).

Low employment rates for PWDs have been reported in national and international reports, yet an adequate overview of the state of employment of PWDs in KSA is still unavailable. The index introduced below measures the current state of implementation of the policies and regulations intended to uphold the rights of PWDs in the Saudi workforce.

This study sets out the SIEEIPD to be used as that measurement tool. Regular calculation of the index would:

1. Provide reliable data regarding the employment of PWDs in KSA.
2. Inform decision-making in the development of policies and practices.
3. Refine existing supportive programs and initiatives.
4. Evaluate workplace performance regarding policies and practices.
5. Monitor the NTP and the HCDP progress towards PWDs' employment.

Process of Developing and Validating the Index

Theoretical Framework

To gain a thorough understanding and definition of the multidimensional notion of including PWDs within the workforce, a literature review guided the identification process of the domains and subdomains of the SIEEIPD. This review encompassed local and international policies and regulations, UN reports on the rights of PWDs, international indices, and best practices regarding PWDs' employment. Consequently, four main domains reflecting the index's multidimensional nature have been identified: Institutional Policies and Regulations, Accessibility and Accommodation, Equality and Professional Development, and Culture and Leadership.

The employment and inclusion of PWDs involves several concepts that form the whole phenomenon. Thus, it is imperative to define both the phenomenon itself, and its multiple underpinning domains. It is also essential to provide users with a clear definition of what the SIEEIPD will measure. The process of applying disability inclusion in workplaces can be measured and analyzed with reference to four main domains (Nardo et al., 2005). The SIEEIPD links the underlying theoretical foundation of the disability employment and inclusion phenomenon and the structure of the composite index (Nardo et al., 2005). It has developed in seven stages, as follows.

Stage 1: Surveying current practices and existing data.

We contacted Saudi government entities such as the Ministry of Education, the Ministry of Commerce, the HRSD, and the Ministry of Health and 24 public universities to obtain data on PWDs and analyze the policies and procedures regarding disability empowerment. Information was found on

supportive programs and initiatives but the data on PWDs was limited. For instance, responses were received from only two ministries out of four, and from six universities out of 24, raising concern about the quality of data and reporting practices for PWDs in public institutions.

Stage 2: Benchmarking and best practices.

Following the literature review, global indicators designed to measure the empowerment of PWDs in the workforce were also analyzed. The SIEEIPD was specifically informed by the following disability indices:

- USA Disability Equality Index (DEI)
- 2021 US National Organization on Disability – USA Disability Employment Tracker
- Australia’s Access and Inclusion Index of PWDs
- EU Survey - Disability Employment Expert (DISEMEX)
- Washington Group (ILO) Labor Force Survey Disability Module (LFS-DM)
- Australian Disability Employment Strategy 2018–2020.

The DEI, the Disability Employment Tracker, and Australia’s Access and Inclusion Index are tools designed to measure the performance of a workplace in terms of its disability inclusion policies and practices that enforce recruiting, onboarding, and retaining PWDs. These tools rank organizations in several areas, covering enterprise culture, leadership, accommodation and accessibility, recruitment, and retention. Each domain signifies disability employment policies and practices, consisting of several questions that examine how workplace implements inclusive policies. Questions also require evidence of compliance with standard practices. Such assessment processes identify areas of improvement. They additionally foster employer understanding and the implementation of workplace standards for PWDs.

Through a questionnaire, DISEMEX examines best practice for PWDs’ participation in the workforce covering the organization’s disability-inclusive policies. Following similar aims and methods, the ILO includes domains such as barriers to employment, accommodations attitudes, and social protection. Finally, the Australian Disability Employment Strategy empowers organizations to be disability-confident and build an accessible, equitable, inclusive, and safe workplace for PWDs through initiatives and innovative actions. The strategy

consists of five focus areas, each of which suggests actions to accomplish the strategic goal. All these tools share similar areas of interest, which focus on tracking the implementation of disability employment policies.

Stage 3: Building the Index.

SIEEIPD's main domains were determined based on the following criteria: frequency in global indicators, alignment with national and international policies and procedures to which the Kingdom is obligated, and relevance to the Saudi context. Based on these domains, the SIEEIPD defined operationally as a composite index used to objectively evaluate the degree to which employers support an inclusive, equitable, and accessible environment for PWDs. It evaluates several domains that together help PWDs to participate fully and progress professionally. The index score operates from 0 to 100; 100 is the maximum level of inclusion. Whereas a number closer to 0 implies inadequate conditions in the evaluated domains, a score approaching 100 indicates a positive and inclusive workplace environment.

The **SIEEIPD** consists of four main domains and nine subdomains composing a total of 33 indicators that were identified. The weight of each indicator was determined based on its perceived importance in the Saudi context. Each main domain is described in Table 1, and all indicators are covered in depth in Table 2.

Table 1: Index Domains description

Domain	Definition
Institutional Policies and Regulations	The internal policies and legislations that governs all aspects of disability employment within Saudi workplaces.
Accessibility and Accommodation	All the adjustments that have been implemented in the workplace to ensure PWDs' access to physical and digital equipment grounded in required standards and essential in their work tasks.
Equality and professional development	All measures that ensure the job retention and fulfilment of professional development for employees with disabilities.
Culture and leadership	The overall cultural and leadership commitment towards employees with disabilities through certain practices and programs.

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Table 2. (SDEEI) domains and sub-domains

#	Main Domain	Weight	#	Sub-domain	#	Indicator	Weight
1	Institutional Policies and Regulations	30%	.1	Policies and procedures that are clearly stated and announced	1.1.1	Existence of clauses in policies that ensure the facilitation of support for employees with disabilities	5%
					1.1.2	Number of publishing and awareness channels about policies, rights, and regulations for individuals with disabilities	4%
					1.1.3	Existence of a clear policy for the expression of grievances or complaints by employees with disabilities	4%
					1.1.4	Rate of complaints by employees with disabilities which have been resolved in accordance with the announced policies and regulations	4%
					.1.5	Existence of procedures that support the privacy and confidentiality of information of employees with disabilities	4%

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			1.2	Periodic development of institutional policies and regulations	1.2.1	Rate of satisfaction of employees with disabilities with the implementation of institutional policies and regulations	4%
					1.2.2	Policies are periodically reviewed and updated to ensure the provision of support and facilities for employees with disabilities	5%
2	Accessibility and Accommodations	20%	2.1	Digital Accessibility: Compliance with the conditions and requirements of the Web Content Accessibility Guideline	2.1.1	The workplace website has been designed to ensure easy access of users with disabilities to digital content	3%
					2.1.2	Existence of electronic systems in the workplace that facilitate the completion of transactions and work tasks by employees with disabilities	3%
			2.2	Physical accessibility: Compliance with the conditions and requirements for individuals with	2.2.1	Conformance of the construction specifications of the workplace with the Saudi Building Code	3%
					2.2.2	Existence of explanatory signs and instructions to facilitate the mobility of employees with disabilities in the workplace	2%

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				disabilities as stated in the Saudi Building Code	2.2.3	Existence of office accommodations in the workplace that support employees with disabilities in the completion of daily work tasks	3%
				Accommodations that support the completion of work tasks	2.3	Existence of clear procedures for employees with disabilities to receive support to complete work tasks	2%
					2.3.2	Existence of an individual responsible for providing accommodations that support the completion of work tasks by employees with disabilities	2%
					2.3.3	Existence of services for psychiatric consultation and professional support for employees with disabilities	2%
3	Equality and Professional Development	30%	3.1	Stability and job retention	3.1.1	Job advertisements reflect an acceptance of diversity and individual differences among job applicants	3%
					3.1.2	Job advertisements are designed in a manner that ensures accessibility for applicants with disabilities	2%
					3.1.3	Proportion of employees with disabilities to the total number of employees in the establishment	4%

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					3.1.4	Ratio of female to male employees with disabilities in the establishment	3%
					3.1.5	Existence of a flexible system for hiring full-time or part-time workers	2%
				3.2 Professional development and promotion opportunities	3.2.1	Existence of an orientation and training plan for employees with disabilities on working tasks	3%
					3.2.2	Existence of ongoing professional development and continuous training programs that contribute to the promotion of employees with disabilities	3%
					3.2.3	The workplace has individuals with disabilities in leadership positions	2%
					3.2.4	Ratio of female to male employees with disabilities in leadership positions in the workplace	2%
					3.2.5	Number of employees with disabilities who have been employed at the workplace for one year or more	4%
					3.2.6	Ratio of female to male employees with disabilities	2%

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						who have remained employed in the workplace for one year or more	
4	Culture and Leadership	20%	4.1	Culture of the workplace	4.1.1	The mission of the workplace reflects the principles of equity, inclusion, and diversity in human resources	2%
					4.1.2	Existence of positive societal practices inside the workplace that promote a sense of belonging in employees with disabilities	3%
					4.1.3	Existence of financial initiatives that support community-based services for individuals with disabilities outside the workplace	3%
			4.2	Leadership support	4.2.1	Existence of annual awareness programs for leaders and employees to promote a culture of inclusion and an acceptance of diversity	3%
					4.2.2	Existence of improvement measures that are based on the rate of satisfaction of employees with disabilities	3%
					4.2.3	Number of female employees with disabilities on the executive board of the workplace and its main	3%

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					committees	
				4.2.4	Number of male employees with disabilities on the executive board of the workplace and its main committees	3%
4 Main Domains			9 Sub-domains		33 Indicators	100%

Indicators within the subdomains measure policy existence, implementation, monitoring, and improvement processes based on the following criteria. Each indicator should:

- Be consistent with current international and national policies and worldwide best practices.
- Add value to employers.
- Applicable.
- Supported by evidence.

Stage 4: Index first draft review.

Meetings were held with expert statisticians to review the weighting determination of every domain in the index. International and national experts reviewed the index such as the Office of the UN High Commissioner for Human Rights and the National Center for Performance Management (ADAA) for review. The Index was also simulated using data from Princess Nourah bint Abdulrahman University (PNU). Feedback from each was taken into consideration in the revised version of SIEEIPD.

Stage 5: Index face validity.

Focus groups were held with various stakeholders to: ensure that the Index variables were clear, comprehensive, and relevant to their domains; second, to obtain Index face validity. Involving stakeholders in the evaluation process was a crucial step in fostering a greater sense of investment in the indicator and encouraging Index implementation. Three focus groups were conducted separately with each stakeholder. Snowball sampling was used. We asked participants to contribute to recruiting other suitable participants.

Input from decision makers helped in assessing how the Index reflected disability employment regulations. Employers were included to ascertain the usability and feasibility of the Index. Feedback from employees with a variety of disabilities, such as physical, blindness...etc. confirmed that SIEEIPD's domains and indicators addressed important aspects reinforcing the implementation of best practices in the workforce. In all three focus groups, the 33 indicators were displayed using the electronic platform 'Mentimeter,' which is software that allows participants to scan a QR code and rate each indicator directly from their mobile phones. We asked participants to identify any

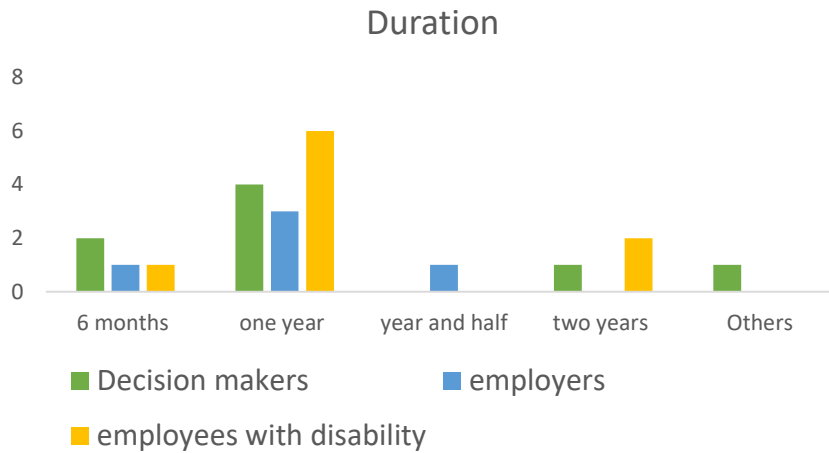
indicator that they found ambiguous, confusing, or difficult to answer. Additionally, we asked them to provide written suggestions regarding any indicators that required revision. Specifically, they first rated the clarity of each indicator as either 'clear' or 'not clear,' and then we asked them to rephrase the unclear indicators. Finally, we asked them to weigh each indicator to reflect its significance in the Index.

The replies of twenty participants were analyzed through means, percentages, and frequencies. Moreover, each criterion was sorted using the following scoring scheme: "acceptable" if the participants' approval of the indicator reached 70% and above based on their responses; "acceptable but could be improved" if the participant's responses to the indicator reached 50% to 70% approval; and "needs revision or modification" if the participant responses to the indicator were lower than 50% approval.

The results from the focus groups validated the initial version of the Index. All 33 indicators received high scores for clarity, comprehensiveness, and relevance to the subdomains. Disparities between the focus groups were minimal. However, some minor modifications were made to enhance clarity. For example, certain terminologies, such as "disability support" and "accommodations," were revised. Additionally, we increased the weights of some indicators based on participants' insights, such as "Conformance of the construction specifications of the workplace with the Saudi Building Code". Additionally, participants shared their views on how frequently the index should be implemented, as shown in Figure 1.

Figure 1

The frequency the Index will be measured – stakeholders' answers



Stage 6: Piloting the Index.

The Index was piloted to test domain reliability and validity, data collection, recruitment strategy, and to identify any areas of improvement before the actual Index implementation. Index was integrated into a prototype website that allows employers to: create accounts, respond to all 33 indicators, and upload required evidence. Index validity and reliability were calculated based on the data provided by employers of PWDs within the public and private sectors. These employers participated in the pilot study by invitation. To assess reliability, internal consistency was measured using Cronbach's alpha, as follows:

$$\alpha = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum_{i=1}^n SD_i^2}{SD_x^2} \right)$$

Where SD_x^2 is the variance of the total test scores, SD_i^2 is the variance of the individual indicator scores, and n is the number of indicators ($n = 33$). A Multi-Trait Multi-Method (MTMM) matrix correlation was used to assess the validity of the Index. Construct validity provides correlation evidence indicating that a construct has a strong (convergent validity) or a weak (discriminate validity) relationship with the Index variables.

Stage 7: Calculating the Index.

The final version of the Index is intended to be integrated into an official website available to all employers of PWDs across the Kingdom. Employers will be encouraged to create an account and fill in the requirements for each indicator in the Index and upload evidence. A categorical scale was determined to assign a score for each indicator. Categories are numerical, such as 0 (the information does not exist) or 1 (the information exists). Missing data often hinders the development of robust indicators. Two methods will be employed to address missing data:

1. Case deletion (complete case analysis): omitting the missing records from the analysis. This method ignores any systematic differences between complete and incomplete samples and only gives unbiased estimates if the deleted records are a random subset of the original sample.
2. Single imputation or multiple imputations: Mean/median/mode substitution, regression imputation, or hot-and-cold imputation, where there are attempts to substitute values for missing data as part of the analysis, or cold-deck imputation, expectation-maximization imputation, or multiple imputation like Markov Chain.

Because the indicators in data collection may have different measurement units, normalization is essential before any data aggregation takes place. A Min-Max normalization approach will be used, which ensures the indicator values have an identical range [0, 1] by subtracting the minimum value and dividing it by the range of the indicator values. However, extreme values/or outliers could distort the transformed indicator. The Index score will be calculated by using the weighted mean:

$$Index\ Score = \frac{\sum_{i=1}^n D_i W_i}{\sum_{i=1}^n W_i}$$

Where D_i is the normalized value of an individual indicator for each company, W_i is the weighting associated with an individual indicator, and n is the total number of Index indicators. The values of each domain will be standardized using the min-max approach, which will be calculated separately using the weighted mean.

The Cronbach coefficient alpha (C-alpha) can be used to estimate internal consistency. C-alpha is a measure of dependability based on the correlation between individual *indicators*, not a statistical test. That is, if the correlation is high, then the separate indicators are likely to be measuring the same underlying concept. As a result, a high c-alpha, or "reliability," suggests that individual indicators are accurately assessing the fundamental phenomena. Nunnally (1978) suggests 0.7 as an acceptable reliability threshold.

The Index score ranges from zero to 100, with 100 being the highest score. The closer the scale value is to 100, the more likely it is that the scale is positive. Conversely, the closer the value of the scale is to zero, the more unsatisfactory the conditions in the areas that make up the scale are. Index results are reported as an aggregate. The Index score is divided into four categories as shown in Table 3

Table 3

Index Scoring Guidelines

Index Scale	Level	Scale value
75-100 (A)	Mastery	The organization demonstrates consistent practices with evidence of applying most indicators, ranging from 25 to 33
50-74 (B)	Intermediate	The organization has emerging practices with evidence of implementing some indicators, ranging from 24 to 17.
25-49 (C)	Performing	The organization has responsive practices with evidence of implementing a few indicators, ranging from 16 to 9.
0-24 (D) e	Beginner/novic	The Organization has insufficient practices and lacks evidence of implementing indicators ranging from 8 to 0

Each participating employer will receive a score report, outlining their level of performance both cumulatively (out of 100) and on each of the 33 specific indicators. Only companies with a score of 75 or above would be published, with the overall score to be published by the independent body that will adopt and monitor the Index.

Pilot Results

Results were generated using numerical and content analysis based on the responses of six companies. Companies that failed to provide proof of practice, or did not meet the evidence criteria outlined in the evidence guide were excluded from the analysis to avoid skewing the overall results.

With the help of field research assistants, only twelve out of thirty companies responded. However, their responses to the Index indicators fluctuated. Out of 33 indicators, the highest response received was 21, and eight responses were the lowest, which is considered a low response rate. Thus, the scoring parameters were used to descriptively analyze evidence that workplaces provided. This allowed to assess workplaces' practices to employ, empower, and include PWDs in the Saudi workforce. As shown in Table 4, one out of the six workplaces received a score of 68%, indicating 'intermediate' performance, while four workplaces received scores ranging from 31 to 36%, indicating a 'performing' level. The remaining workplace received a score of 23%, indicating that it is at the 'beginner' level.

Given the low response rate, the Index' validity and reliability were calculated based on only six workplaces whose overall responses were higher than 8. Following data normalization, construct validity was employed to establish whether the construct had convergent or discriminant validity associated with the Index variables. The value of the construct validity through the correlation matrix was (-0.25,0.42). This was affected by the low response rate. Internal consistency was measured using Cronbach's alpha with a value of 0.4199, which indicated that the index is reliable at the piloting stage.

Table 4

Index Scale Class

Workplace	Index Scale Class	Index Rating Level	Scale Value
C	23%	Beginner/Novice	Organization has insufficient practices and evidence in implementing indicators.
H	35%	Performing	Organization has responsive practices and evidence in implementing a few indicators.
R	31%	Performing	
I	33%	Performing	
M	34%	Performing	Organization has emerging practices and evidence of implementing some indicators in each domain.
Z	68%	Intermediate	

We analyzed descriptively the most responsive indicators from workplaces. The domain of Equality and Professional Development received the most responses, with six out of the eleven indicators receiving responses from most of the respondents. This might be attributed to current government efforts towards enforcing the employment, empowerment, and inclusion of PWDs in the Saudi workforce. The second domain was Accessibility, where four out of the eight indicators received responses from most of the respondents. The domains of Institutional Policy and Culture and Leadership scored three out of seven indicators and two out of seven indicators, respectively, which was low compared to the other domains. Findings show that five employees attested to providing the following PWDs:

- Existence of an individual responsible for providing accommodations that support the completion of work tasks by PWDs.
- Job advertisements of the company's embrace of diversity and individual differences among job applicants.
- Existence of an orientation and training plan for PWDs on working tasks.

This could be because these practices have been highlighted by HRSD programs. In contrast, five indicators did not receive any responses from any of the participating employers. These were:

- Existence of explanatory signs and instructions to facilitate the mobility of employees with disabilities at the workplace.
- PWDs are in leadership positions.
- Ratio of female to male employees with disabilities in leadership positions in the workplace.
- Number of female employees with disabilities on the executive board of the workplace and its main committees.
- Number of male employees with disabilities on the executive board of the workplace and its main committees.

This lack of responses may have been because these practices are not yet widely used by many companies. Many practices included in the Index are relatively new, yet they are crucial to the current national push for women in leadership and female empowerment, including women with disabilities. Four of the indicators were dedicated to women. For the indicator 'Ratio of female to male employees with disabilities in the establishment', four organizations

indicated that they hire women with disabilities, leaving two organizations without any women with disabilities. Aljanahi et al. (2024) identify the lack of data on disabilities, particularly among women, as a significant barrier to understanding the educational and employment needs of this population. This data gap is attributed to various factors, including social stigma, which hinders both researchers and policymakers from adequately addressing these needs.

Regarding job stability, the score for indicator ‘Ratio of female to male employees with disabilities who have been employed at the workplace for one year or more’ was zero. The indicators: ‘Ratio of female to male employees with disabilities in leadership positions at the workplace’ and Number of female employees with disabilities on the executive board of the workplace and its main committees’ received similar scores. Indicators pertaining empowering women and men with disabilities in leadership positions scored zero. These findings could be attributed to a variety of factors, as evidenced by the studies from the prior literature reviewed earlier. PWDs are less likely than those without disabilities to acquire high-quality education (Alajmi & Albatal, 2015; Cui 2023). Furthermore, societal attitudes might marginalize individuals due to their disability. Sharma et al. (2025) conducted a systematic review on disability and employment, highlighting that a lack of awareness regarding disability within the workplace serves as a significant barrier to the inclusion of individuals with disabilities. Despite the small number of replies received, the SIEEIPD appears to be legitimate and trustworthy. The usefulness of the SIEEIPD was confirmed by both the focus groups and the pilot study. Its relevance, clarity, and comprehensiveness were attested to by the focus group results. Its validity and reliability were also confirmed in the pilot phase.

Given the nature of this pilot project, it is worth emphasizing that time constraints hindered additional data collection. This may also explain the low response rate. Consequently, the low response rate does not indicate poor performance or a lack of understanding of the SIEEIPD. Experience complying with performance indicators eases organizations’ efforts to provide evidence compared to others who do not have such expertise. For example, firm Z responded the highest among other companies because the company had a similar process to receive the Moaamah certificate. Other countries which use indexs to assess the employment of PWDs have had similar experiences, particularly in the early stages of implementing the indicator (e.g., the DEI

Index). The low response rate and the absence of relevant data, on the other hand, can be said to underline the relevance of the Index in accomplishing its aim of raising employer awareness of policies and practices affecting PWDs at work. Implementing the Index would encourage PWDs to participate in the workforce and empower them. It would also support the planning of future improvements as well as helping in the realization of Saudi Vision 2030 goals, which include empowering PWDs in the job market.

Discussion

The main objective of this study was to develop the SIEEIPD to capture the efforts being made to include PWDs in the Saudi workforce to support the disability employment practices carried out by all government services and government-supported stakeholders in KSA. The SIEEIPD development went through several stages that included stakeholders such as the HRSD, the Commission of Human Rights, the Authority of People with Disability, employers, and employees with disabilities. During the development process, however, the researchers encountered several hurdles; these included inadequate data related to the numbers of employed PWDs, limited local studies and prior research related to PWDs, limited cooperation of the relevant authorities with the researchers, overlap among the entities involved in empowering PWDs which may result in misrepresentative data and efforts, and the use of a range of different disability classifications by diverse entities. To overcome these challenges, the SIEEIPD development process drew on the perspectives and participation of a diverse group of stakeholders, including decision makers, employers, and employees with disabilities.

Additionally, the Saudi context, including legal reinforcement and employment programs and initiatives and global indicators related to empowering PWDs in the workplace, served as supportive vehicles to build the index. This resulted in the SIEEIPD being constructed based on four core domains, addressing: institutional policies and regulations, accessibility and accommodation, equality and professional development, and culture and leadership, as well as nine subdomains that are tracked by 33 indicators.

The development of the SIEEIPD is a pioneering endeavor in the KSA and an instrument with various essential elements that can provide reliable and credible statistical data to assist decision makers in designing systems and applied practices. The SIEEIPD can support the accomplishment of the strategic direction of the NTP and HCDP in facilitating the participation of PWDs in Saudi workforce. Further, it can provide a snapshot of progress in empowering women with disabilities in the Saudi workforce. It can also enable tracking the progress of national efforts and commitments towards achieving international goals.

Based on the outcomes of international indexes, we believe that the SIEEIPD field application can contribute to determining the objectives of empowering PWDs in the workforce after several measurement cycles have been completed. Reports of the international employment indexes imply that these indicators have considerably improved the application of legislation and best practices linked to the employment of PWDs worldwide. They also show that companies are eager to make positive changes and contribute to the access and inclusion of PWDs in the workplace. For example, the DEI was launched for the first time in 2012. In 2014, 48 firms participated in a prototype index. Following the pilot index, the yearly DEI has been maintained and increased, and according to the statistics, 415 businesses participated in 2022, up from 319 in 2021 and 247 in 2020. This steady rise in participation indicates that the DEI is gaining popularity among enterprises across industries. Indeed, the DEI's 2022 report shed light on new trends highlighted by the participants that address disability inclusion and equity moving forward. These include, but are not limited to; 126 organizations having a senior leader who was disabled, compared to 99 in 2021; 96% of businesses providing flexible work arrangements, and 50% investing in new technologies to improve digital accessibility.

Similarly, the Access and Inclusion Index 2020/21 reported that the longer an institution has participated in the Index over the previous five years, the more mature and growth in creating an inclusive and equitable workplace for all. Organizations usually spend the first two years establishing a baseline and testing their existing practices things before adopting, analyzing, and recognizing best practices in the third year. Thus, overall, the use of indicators considerably improves the application of legislation and best practices linked to PWDs over time.

To achieve similar progress, the SIEEIPD should be endorsed and governed by an independent governmental body such as ADAA to ensure index implementation sustainability, since this body is responsible for monitoring public sector performance, evaluating both public and private sector progress in fulfilling Vision 2030 goals, and strengthening system-wide accessibility and the inclusion of PWDs within the workforce and enhancing their rights. Collaborative efforts are essential for the implementation of SIEEIPD. Furthermore, workshops and courses should be provided to organizations to raise their awareness about employment policies and practices for PWDs and to fulfill the index requirements. We believe that the SIEEIPD should be applied annually, and that the results could be presented on a dashboard where organizational progress in implementing policies and practices could be classified based on a specific scoring guideline. In doing so, instructions and recommendations could be given to organizations to help them optimize their progress and scores in including PWDs within their workplace, which might also help those organizations to invest in PWDs as productive members of society. Moreover, the SIEEIPD should be applied for at least three intervals to give a baseline guide for continuous development and improvement. The SIEEIPD could also be used as a self-evaluation tool where organizations may determine their own maturity level in relation to the implementation of policies and regulations for the participation of PWDs in the workforce.

Nevertheless, future implementation of the Index may face several challenges, such as:

- Limited cooperation of relevant authorities with the researchers.
- Inadequate data related to the numbers of employed PWDs.
- The wide scope of the project, which seeks to include all government services and government-supported stakeholders in KSA.

Conclusion

To conclude, this research is a first step towards determining the employment status of Saudi PWDs. Its objective was to provide an indicator to track the execution of PWDs' job rights, as well as a number of indicators to track women with disabilities' participation in the workforce. The SIEEIPD is designed to assist both the government and organizations in evaluating the execution of policies relating to work participation and inclusion for PWDs. The

SIEEIPD data is likely to help decision-makers to determine which improvements and actions should be made to promote PWDS inclusion and participation. In addition, the SIEEIPD data will possibly be useful in providing information on the economic benefits of PWDs' participation. One of the most significant impacts of this Index is that it demonstrates Saudi Arabia's efforts to employ PWDs in accordance with international agreements. As it is aligned with Saudi Vision 2030 in its aim to improve the quality of life of PWDs and strengthen Saudi Arabia's commitment to disability rights, the Index is intended to provide longitudinal, aggregated information that monitors progress and improvement in the implementation of policies that lead to better inclusion for PWDs within the labor market.

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