



A Multidimensional Analysis of Women's Empowerment in Saudi Higher Education Using SEM

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ABSTRACT

This study examines the determinants of women's empowerment among academic and administrative staff in Saudi Arabian universities, focusing on higher education as a key area for gender equality and empowerment. Drawing on a cross-sectional survey conducted across five universities, the research explores various dimensions of empowerment, including financial, social, workplace, relational, and personal empowerment. Using SmartPLS for data analysis, the study identifies significant positive relationships between women's empowerment and these dimensions, highlighting the role of education, government initiatives, and professional attributes in fostering empowerment. The findings underscore the importance of contextual factors, such as Saudi Arabia's Vision 2030, in promoting gender equality and suggest that empowered women in higher education can serve as role models, influencing future generations. This research contributes to the literature on women's empowerment by providing a comprehensive analysis of the factors driving empowerment in Saudi Arabia's higher education sector, offering insights for policymakers and institutions aiming to enhance gender equality and women's participation in the workforce.

INTRODUCTION

Women's empowerment can be understood in various ways, such as valuing women's opinions and perspectives or improving their status through education, literacy, awareness, and training (Bayeh, 2016; "Gender Equality and Women Empowerment in The National Development of Indonesia," 2020; Mosedale, 2005). As part of Saudi Arabia's efforts toward sustainable development, the kingdom's has made women's empowerment a key priority, as highlighted in its national initiatives (Unified National Platform, 2021). There is a growing body of research exploring women's empowerment from multiple angles. It is often defined as the process through which women gain the ability to make strategic life choices, something they may have previously been denied. This process involves three main components: access to resources (both material and social), agency (the ability to make decisions about one's life, such as marriage, family planning, etc.), and achievements (such as education, employment, political participation, and life expectancy) (Kabeer, 1999). The World Bank (2014) further defines agency as the ability to make decisions and take actions to achieve desired outcomes without fear of violence or

retribution. While agency is a direct measure of empowerment, resources and achievements are often used as indirect indicators (Richardson, 2018). Despite extensive research, there is still debate about how to measure and understand women's empowerment, particularly in organizational contexts (Raudeliuniene et al., 2014). Evaluating empowerment is challenging due to its complexity and the varying definitions and models used. This raises the question of how to ensure that the factors being measured accurately reflect reality, especially in developing countries, and provide useful insights for future policies. In Saudi Arabia, gender equality is a key focus of the 2030 Agenda for Sustainable Development.

This study aims to analyze the factors influencing women's empowerment in Saudi Arabia's higher education sector. Previous research has shown that empowerment factors and evaluation methods can shape women's roles through political and administrative measures (Bayeh, 2016; Rafiey et al., 2018). However, measuring empowerment is difficult due to its abstract nature (Bishop & Bowman, 2014; Mishra & Tripathi, 2011). Additionally, there are gaps in the current understanding of women's empowerment, particularly when

comparing data across countries, as information is often limited or inconsistent. Saudi Arabia has made significant strides in promoting women's empowerment through its Vision 2030 initiative (Khan, n.d.; Saudi Arabia, 2019).

This study seeks to address these gaps by developing composite indexes to measure women's empowerment across different dimensions. By creating a standardized database of gender-related information, we aim to better understand the various aspects of empowerment and use factor analysis to create distinct indexes. While there has been significant research on women's empowerment in general, there is limited focus on Saudi women, particularly those working in academic and administrative roles at universities. Academic staff, in particular, play a crucial role as they interact directly with female students and can serve as role models, passing on their empowerment to future generations. By comparing the levels of empowerment among academic and administrative staff, this study aims to inform targeted empowerment programs in higher education institutions.

The primary goal of this research is to explore the key determinants of women's empowerment in Saudi universities. The findings will contribute to the existing literature on women's empowerment and the gender gap in Saudi Arabia, providing valuable insights for designing policies and programs that enhance empowerment, productivity, and academic well-being. The study uses an adapted version of the Women's Empowerment in Higher Education survey (Alkire et al., 2013; Rana et al., 2025) to gather data and analyze the factors influencing empowerment in this context.

REVIEW OF LITERATURES

The Saudi government aims to achieve a cohesive method of equality between men and women in various fields by improving their rights, support systems, and care programs, thereby improving their working environment in all sectors. The review looks at women's rights in Saudi Arabia, justice decisions that strengthen women's rights, women empowerment in education and training, female health, social support, the National Family Safety Program, and empowering women in justice, business, and politics. (Arabia, 2022; Medabesh & Khan, 2019). (Kabeer, 1999; Shehawy et al., 2024) stated that empowerment consists of three components: individual resources (access to material, human, and social resources), agency (the ability to make own life choices, such as the decision to marry and who to marry, the decision to have children, and so on), and accomplishments (well-being outcomes such as life expectancy, access to education, labor market participation, political representation, etc.). The World Bank's (2014) define empowerment as "the ability to make decisions about one's own life and act on them to reach a desired outcome, free of violence, retribution or fear" (Medina & Herrarte, 2020; Shehawy & Ali Khan, 2024). Other definitions of women's empowerment, on the other hand, are more related to the

achievement viewpoint, because women's empowerment is conceived of as improving women's ability to access development components such as health, education, earning opportunities, equal rights, and participation in politics (S. Abidi & Faisal AU Khan, 2018; Duflo, 2012; Medina & Herrarte, 2020). At present, the Gender Inequality Index (GII) proposed by the (United Nations Development Programme) UNDP permits comparison of wide sample of countries since 1995 emphasizing on the measurement of achievements (UNDP, 2022). Therefore (World Economic Forum, 2018) classifies four different dimensions: (i) economic participation and opportunity, (ii) educational attainment, (iii) health and survival, and (iv) political empowerment. (Duflo, 2012; Faisal et al., 2015; Schwab, 2018).

Authorities and officials in the Kingdom of Saudi Arabia have established strategies and policies aimed at empowering women economically and activating their position in the Saudi society's rapid progress. The sixth goal of the Saudi Vision 2030, which promotes gender equality and women's empowerment. The government is making extraordinary efforts to promote equality, promote equal educational opportunities and training, and enhance women's labor-force participation. As stated in Vision 2030, the Kingdom of Saudi Arabia helps to encourage female leadership in political and economic spheres. Government adopted many initiatives, as described by (Lardhi, 2020; News, 2021), that helped develop work opportunities and businesses for low-income women, as well as reduce their low employment ratios in KSA.

Further on accounting to women family traits there were several review that mentioned literacy was linked to a higher chance of spousal discussion about optimum family size that will determine on their empowering capability (Hogan et al., 1999; Upadhyay & Karasek, 2012). A study in 1994 Zimbabwe DHS, discovered that women's greater household decision making was connected with their partners' ideal family size (Hindin, 2000; Upadhyay & Karasek, 2012). Women's empowerment is widely regarded to increase the well-being of their families, particularly their children. However, while more empowered women are substantially associated with greater levels of family welfare, there is only minimal evidence to suggest that this association is causative. Empowered women have been seen to have a major impact on their welfare as well as among family features. Advance gender constructs, including gender-equitable attitudes or decision-making authority, are used to assess how empowerment and improvement in gender-related aspects might result in beneficial outcomes for women empowerment (Dadzie et al., 2021; Gonçalves et al., 2021; Mahamed et al., 2012; Upadhyay & Karasek, 2012).

Women in the workplace are frequently stereotyped as emotional, irrational, and intuitive decision-makers (Green & Casell, 1996). The structural limits for distinct group members, such as laws and rules, also have an impact on empowerment. According to the findings of this study, there

is a direct link between knowledge, human capital, social capital and social capital and performance (Hechanova et al., 2006; Laub, 1999). Employee performance can be improved with the assistance of employee professionals, and innovation can be provided to access empowerment (Wood & Wall, 2007).

There are several personal traits in women that can define a women empowerment: A woman who is empowered is a seeker, she makes progress to identify her meaningful life and commits to living in accordance with it. Whereas Confidence inbuilt on self-awareness, and an empowered woman understands precisely who she is. An empowered woman is always eager to learn. She qualifies for jobs that appear to be just out of her reach. An empowered woman understands what it means to live genuinely and with integrity (*9 Qualities of an Empowered Woman — Bright Space Coaching / Leadership Development for Women*, n.d.).

Research Objectives: The study access and evaluate different indicators of women empowerment among Saudi women working in higher education. The study emphasizes on women empowerment as a holistic approach to access different factors as a determinant of women empowerment in higher education at Saudi Arabia. The proposed hypothesis is used to establish the correlation among the determinants factors to access women entrepreneurship among the Saudi Women working is Higher Institutions at Saudi Arabia.

THEORETICAL FRAMEWORK OF THE STUDY

Empowerment Indicators

Study conducted by mentioned four important indicator of women's empowerment in developing countries: (i) personal empowerment, (ii) relational empowerment (iii) workplace empowerment and (iv) social empowerment. (Langer et al., 2019) and Financial Empowerment.

Financial Empowerment

Financial empowerment can be defined as an individual's ability to get access to and participate in financial growth processes, as well as to negotiate a more equitable distribution of rewards (Ali et al., 2021). This allows individuals to go beyond day-to-day existence and have more control over personal resources and economic decisions. Financial literacy is critical in providing individuals with the knowledge, skills, and confidence they need to attain financial empowerment (Johnson, 2019). This allows individuals to go beyond day-to-day existence and have more influence over their wealth and strategic decisions. Financial literacy is critical in providing individuals with the knowledge, skills, and confidence they need to attain financial empowerment (Postmus et al., 2012) that could be further indicator for women empowerment. Several researchers have determined gender disparities in financial well-being, as well as its origins and results (Gonçalves et al., 2021). With Increase in women's financial empowerment is critical since they have less control over economic resources

than males. Financial socialization is also strongly linked to financial self-efficacy and assist as an indicator for women empowerment. Similarly, it can also have been drawn conclusion higher degree of financial empowerment could be result of women empowerment (Ali et al., 2021). We also discovered that financial self-efficacy and financial coping behaviors play a positive role in the development of financial empowerment.) external factors, i.e., financial socialization factors and institutions which provide financial literacy to Saudi women (individual factors) in shaping their financial management behavioral pattern improving economic empowerment among them that could be result of women empowerment.

Financial efficacy is a significant predictor of financial behaviors such as financial coping and financial empowerment (Ali et al., 2021). People who have high level of financial self-efficacy, namely, the confidence and ability for using finance in a better manner, can start practicing in constructive approach and preventive financial ways to cope behaviors far better ((Pearlin & Schooler, 1978). Financial literacy is critical in providing individuals with the knowledge, skills, and confidence they need to attain financial empowerment (Johnson, 2019). This demonstrates that, although having generally optimistic economic statistics, Saudi Arabia has a very low score in relation to financial literacy, with women scoring worse than men (Ali et al., 2021). Financial socialization emerged from Socialization theory (Cole, 1988) that refers to learning various financial skills in order to promote financial well-being.

People who have a higher level of financial self-efficacy, i.e., the confidence and ability to use finance in a better way, can practice proactive and preventive financial coping behaviors much better (Pearlin & Schooler, 1978). Financial literacy plays a central role in supplying individuals with knowledge, skills, and confidence, which are vital to achieve financial empowerment (Johnson, 2019). This shows that although Saudi Arabia has generally promising economic indicators, they have a quite low score in terms of financial literacy with women lower than men (Ali et al., 2021). The concept of financial socialization is evolved from Socialization theory (Cole, 1988), which refers to learning different financial skills to improve financial well-being.

Parents create opportunities for financial socialization by providing their youngsters weekly allowance, afford to pay their expenses, and teaching them how to spend and save money. Financial socialization by parents and other social agents is critical in establishing individuals' financial self-efficacy, financial coping behavior, and financial well-being (Pinto et al., 2005) and develops women empowerment. Based on the above discussion the following hypothesis is proposed:

H1: Women Empowerment has a significant effect on Personal Empowerment.

Social Empowerment

Seeks to juxtapose narratives, languages and diverse cultural identities, as part of a broad educational project that wishes to undermine the hierarchical social divisions and classifications created by the modernist mentality (S. S. A. Abidi & Khan, 2022; Markovich, 2012). Tracking the number of members from that culture who employed (or meaningfully engaged) by the organization. Economic, social, religious, cultural, and psychological variables all influence the emergence and development of women's empowerment. In the interest of the nation's growth, modern women have shifted their perspectives and attitudes toward social concerns, customs, and so on. The desire for social freedom in women is significant to their lives and also to the future of the nation. (*The Role of Culture in Women's Empowerment - Smilefoundationindia*, n.d.). Hence from the above reviews the following hypothesis could be proposed:

H2: Women Empowerment has a significant effect on Social Empowerment.

Environmental Empowerment / Workplace

A simple, straightforward example of workplace empowerment is giving every employee the chance to communicate meaningfully (*What Is Empowerment In The Workplace? Plus The Benefits*, n.d.). Empowerment is based on the idea that providing employees with the resources, authority, opportunity, and motivation to do their work, as well as holding them accountable for their actions, will make employees happier and more proficient (*Employee Empowerment in the Workplace: Definition & Best Practices*, n.d.). Employees who work at organizations with cultures of empowerment have greater trust in their leaders ((13) *Six Keys to Leading Positive Change: Rosabeth Moss Kanter at TEDxBeaconStreet - YouTube*, n.d.; *Empowerment at Work. How Do We Get from Here to There?*, n.d.; *How to Build Trust in the Workplace: 10 Effective Solutions*, n.d.; *How to Delegate: Tips for Delegating Tasks at Work*, n.d.; Edelman et al., 2020). Workplace empowerment encourage employees to generate novel ideas and think of new ways of doing things, and to help others in the workplace, volunteer for extra assignments, and be willing to support their organization outside of an official capacity (Islam & Ali Khan, 2024; Islam & Khan, 2024; Lardhi, 2020; Shehawy et al., 2025) that is an important determinant to access and evaluate women empowerment among Saudi women's. Hence based on the above discussion following hypothesis is proposed:

H3: Women Empowerment has a significant effect on Environmental Empowerment / Workplace.

Personal empowerment

Previous research has assessed and evaluated the impact of women empowerment on different dimensions' of women's personality that is reflected on their personal strength, self-esteem (Basargekar, 2009; Deane & Wamoyi, 2015; Medel-

Anonuevo & Bochynek, 1995) control beliefs (Hansen, 2015; Morgan & Coombes, 2013), self-confidence (Burra et al., 2005) and self-efficacy(Deane & Wamoyi, 2015). Hence these components are referred to as personal empowerment that assess and evaluate different psychological aspects about women personal beliefs and their actions. We have selected two different commonly used operationalization, namely control beliefs (Hansen, 2015) and self-efficacy/self-esteem (Deane & Wamoyi, 2015). Personal empowerment, enhances a feeling of trust that helped to explain the effects of empowering leadership on both creativity and citizenship. This is because trust reduces uncertainty in the environment by instilling a sense of safety, which enables employees to take on more risks without feeling vulnerable (Cheong et al., 2016; *When Empowering Employees Works, and When It Doesn't*, n.d.). Based on the above reviews the following hypothesis is proposed:

H4: Women Empowerment has a significant effect on Personal Empowerment.

Relational Empowerment

Relational empowerment includes the ability to navigate and regulate one's inner world and to interact successfully in the interpersonal realm, to have both emotional and social intelligence(Bar-On, 2006) (Hajnci & Vučenović, 2020) (Garbenis, 2020). It also included a commitment to passing on the values associated with collective activity to future members. It also included a commitment to passing on the values associated with collective activity to future members (Christens, 2012). Relational construct includes delegation of authority and decision making, teamwork, feedback and accountability for outcomes (Mcintire, 2011). A study (Hadi & Adil, 2010) establish the relationship between relational empowerment and job performance (Laschinger et al., 2013). Relational empowerment likely to support managements in case of crisis in order to ensure continuity of the firm, indicating that empowerment has an impact on their performance (Bhankaraully, 2019; Suhluli & Ali Khan, 2022). Relational empowerment embrace decision making more when frequently involved in discussions relating to recent issues. Leaders enable employees to value and find meaning in their work by providing information about strategic and operative organizational goals. Relational Empowerment involves responsibility and decision making, power delegation from senior management to other management in the administrative hierarchy (Ahmad & Manzoor, 2017; Meyerson & Dewettinck, 2012) including development of marketing capabilities, relational capital and innovation capability (Sulistyo & Siyamtinah, 2016). For many women, financial freedom is the foremost way to empower themselves (*The Role of Culture in Women's Empowerment - Smilefoundationindia*, n.d.). Hence the following hypothesis is proposed.

H5: Women Empowerment has a significant effect on Relational Empowerment.

RESEARCH METHODOLOGY

Study design

The study makes use of data from a cross-sectional survey done in five Saudi Universities in 2022. The employed women in higher education were chosen for the study using a multi-staged systematic sampling approach. The first phase was the selection of five universities in Saudi Arabia, ranging from private to public. Jazan University, King Abdulaziz University, King Saud University (Public University), Effat University, and Arab Open University are among the five universities (Private University). Finally, 100 volunteers were drawn from the university (100x5 = 500). To eliminate bias, respondents were chosen at each university using simple random selection, and each responder should have an equal chance of participating. The questionnaire was divided into six modules, with the first focused on general information of the respondents and one ‘s personal traits, such as family size, and the other five modules focusing on the factors. For women's empowerment, the data is collected in five categories: financial empowerment, social empowerment, workplace empowerment, and personal empowerment. A Likert scale is used to rate in questionnaires that are intended to gauge respondents' thoughts and perceptions. SmartPLS is used in data analysis to determine validity (convergent and discriminant) and dependability. PLS produces incredibly appealing graphical outputs. Its output is quite adaptable. SmartPLS assists the researcher in analyzing the responses of research participants in order to get trustworthy and consistent results. Common method bias (CMB) occurs when variances in responses are driven by the instruments rather than the respondents' true predispositions that the instrument

seeks to reveal. Common method bias (CMB) occurs when variances in responses are driven by the instruments rather than the respondents' true predispositions that the instrument seeks to reveal. Cronbach's alpha is used by the researcher to assess internal consistency, or how closely connected a group of items is. Internal consistency in scale items is measured using composite reliability. A variance (AVE) is defined as the average of the squared deviations from the mean.

RESULTS & DISCUSSION

To achieve the research objectives, present study used SmartPLS 3 to perform data analysis, due to fact that its appropriateness in analyzing small sample sizes (Chin et al. 2003). A two-step procedure is adopted to evaluate the measurement and structural model.

Handling common method bias

(Podsakoff et al., 2003), stated that, “common method bias (CMB) is the bias that is attributable to the measurement method rather than to the constructs the measures represents”. Items of all the constructs were merged in a single factor and common variance explained was 47.73% which does not exceed 50%. Thus, the common method bias was insignificant for the data set (Podsakoff et al., 2003).

Measurement model evaluation

For examining the measurement model internal consistency, convergent validity indiscrimination validity were analyzed. Convergent validity shows “the extent to which different measures refer to the same conceptual construct” (Dinev & Hart, 2004).

Table 2. Cronbach’s Alpha, composite reliability, and average variance extracted of constructs

Construct	No. of items	Cronbach’s Alpha	Composite reliability	Average variance extracted
Social empowerment	2	0.805	0.867	0.786
Financial Empowerment	1	0.923	0.871	0.795
Environmental / Workplace Empowerment	5	0.789	0.898	0.791
Relational Empowerment	5	0.762	0.923	0.795
Personal Empowerment	4	0.912	0.908	0.742
Government Initiatives	5	0.834	0.878	0.723
Women Family Traits	5	0.736	0.779	0.739
Women Professional Traits	5	0.856	0.818	0.746
Women Personal Characteristics	4	0.841	0.834	0.752

From table2, composite reliability was above 0.7 and average variance extracted exceeded 0.5 (Hair et al., 2010). The value of Cronbach’s alpha to meet internal consistency was also

greater than 0.7 (Fornell & Bookstein, 1982; Fornell & Larcker, 1981). Thus, the convergent validity of the constructs was achieved. To examine the Discriminant

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validity, the (Fornell & Larcker, 1981) criteria was employed. Table depicts the Fornell-Larcker criterion in which the square roots of average variance extracted of the constructs

were higher than the correlation values between each construct as well as other constructs. Thus, Discriminant validity was established as per Fornell-Larcker criterion.

Table 3. Discriminant validity–Fornell-Larcker criterion

	SE	FE	WE	RE	PE	GI	WFT	WPT	WPC
SE	1.000								
FE	0.576	0.886							
WE	0.804	0.871	0.892						
RE	0.687	0.857	0.831	0.861					
PE	0.453	0.644	0.773	0.649	0.850				
GI	0.649	0.766	0.851	0.787	0.750	0.892			
WFT	0.561	0.669	0.566	0.540	0.785	0.795	0.860		
WPT	0.456	0.752	0.692	0.716	0.678	0.702	0.577	0.864	
WPC	0.643	0.755	0.771	0.682	0.881	0.792	0.623	0.776	.867

Model fit estimates

This study tests four hypotheses with the structural equation model. This model provided an adequate fit to the data, with $\chi^2=147.27$, $p<0.00$; GFI=0.96; CFI=0.98; and

RMSEA=0.079. Figure shows the path diagram of variables in this study, indicating that the path coefficient and p-value of these paths.

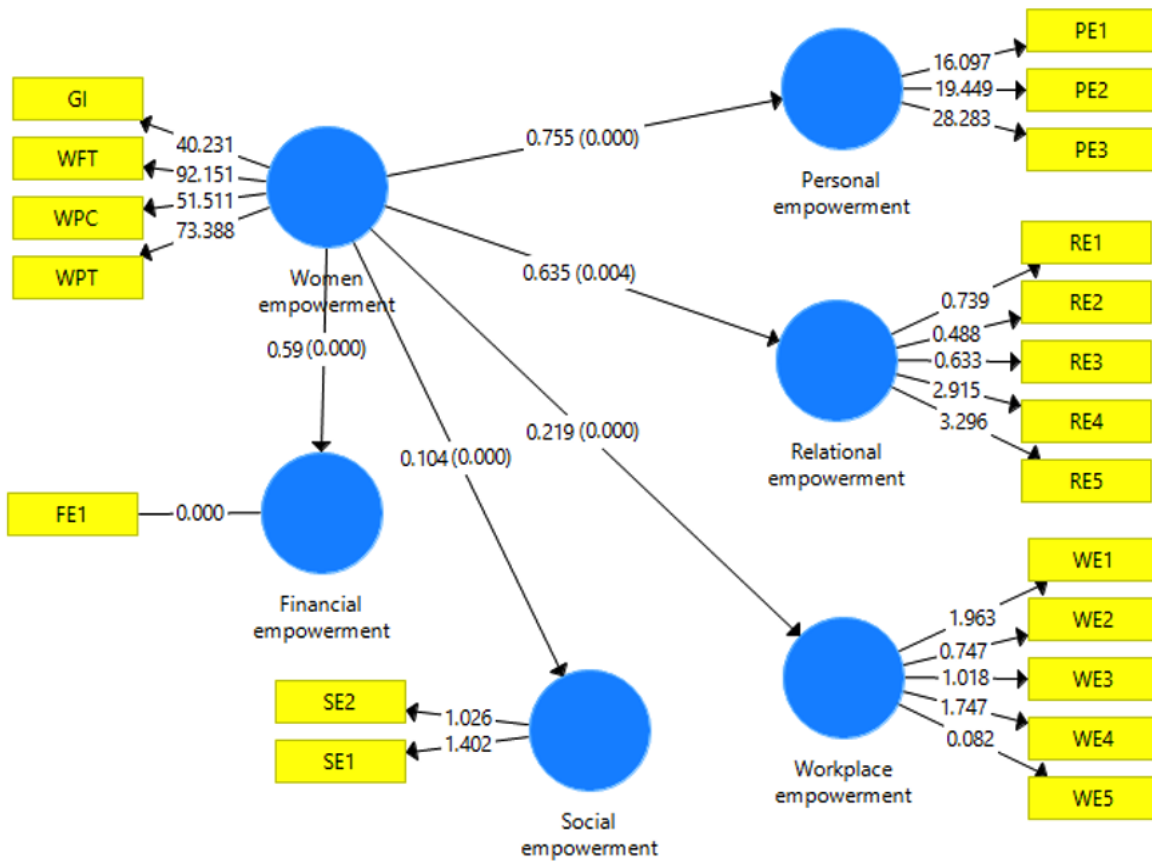


Figure: 1 SEM Model for Women Empowerment.

Hypotheses testing

This study estimated the path coefficient of the theoretical model by bootstrapping method to check the significance

level of hypothetical path. Figure shows the structural model with the standardized coefficients for the research sample.

Table 4: Summary of SEM Results and Hypotheses Testing

Hypothesis	Path	Path coefficient	Standard error	t-static	P	Hypothesis
H ₁	WE -> FE	0.59	0.178	7.432	0.000	Supported
H ₂	WE -> SE	0.104	0.212	5.534	0.000	Supported
H ₃	WE -> WEE	0.219	0.168	3.419	0.000	Supported
H ₄	WE -> RE	0.635	0.392	10.518	0.004	Supported
H ₅	WE -> PE	0.755	0.187	5.387	0.000	Supported

Table 4 shows the standardized path coefficient of each construct along with their respective significance. The standardized path coefficients were found to be significant and positive at $p < 0.01$ and $p < 0.05$, and t static value is greater than 1.96 which indicated that there existed strong evidence in acceptance of the hypotheses H₁, H₂, H₃, H₄, and H₅. Therefore, all the null hypotheses are rejected and alternative hypothesis are accepted.

CONCLUSION

Finding the causes and sources of women's empowerment is critical not just for women, as well as for the whole growth of society. Women who are empowered can help society realize their full potential and contribute to the creation of a better world. Various illuminating studies investigate the origins of women's empowerment around the world, which may be measured by the degree of their associated values. A cross-sectional survey conducted in five Saudi universities, semi-structured interviews, observation methods, and other methods helped us to further expand our understanding about the experiences of many women. However, in order to make generalizable statements, we need to back up these techniques and methodologies using quantitative data. According to (Apodaca, 2009), the interaction of quantitative research and feminist studies enables new avenues of research. With this in mind, the purpose of this article was to combine quantitative approaches (** with final thesis for PhD) with research in by providing a general overview of the situation of women's empowerment at Saudi universities relying on a very large and representative nationwide survey. To further capture the influence of contextual elements, the research used a multilevel approach that integrates individual components with aggregate data. The study shows that women's empowerment affects their personal, professional, and work environments. To summarize, it is also noticed through information published that government initiatives, legislation, Saudi Arabia's Vision 2030, education among women, and professional attributes empower women in the country. According to the semi-structured interview and observation, employed women are more financially empowered than dependent women. The analysis could be based on their pre-employment perceptions as well as their post-employment status. These findings highlight the

importance of incorporating contextual-level aspects into analyses to better understand the situation of women's empowerment in Saudi Arabia in terms of financial empowerment, social empowerment, environmental empowerment, and relational empowerment. Some of these findings back up previous research that has already been published (for example, the favorable benefits of education on women's empowerment). Nonetheless, our study, which is based on an innovative measure of women's empowerment and multilevel analysis, provides several findings that are novel in the literature. In the research there are several hypothesizes that were adapted from previous reviews and refined later to justify the current objective of the study. Hence from the statistical analysis the proposed hypothesis were found significant enough to justify the current research. Moreover, from the statistical analysis we conclude that women empowerment significantly affect financial empowerment, social empowerment work empowerment, relational empowerment and personal empowerment.

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