International Developments in Applied Psychology and Business Management

CONFERENCE PROCEEDINGS

APBM 2024 - 5th International Conference on Applied Psychology and Business Management

10 - 12, October, 2024
Bursa, Turkiye

IATELS
International Association for Technology, Education and Language Studies

INTERNATIONAL DEVELOPMENTS IN APPLIED PSYCHOLOGY AND BUSINESS MANAGEMENT

Conference Proceedings

APBM 2024

5th International Conference on Applied Psychology
and Business Management

10 - 12, October, 2024, Bursa, Turkey

Edited by Prof. Dr. Iryna Sekret

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10 - 12, October, 2024, Bursa, Turkiye, p. 110

Conference Proceedings

This book of the APBM 2024 Conference Proceedings include selected papers presented at the conference which was held on 10 - 12, October, in Bursa (Turkiye).
The studies concern recent findings, practices and approaches in the fields of business and organisational psychology, economics and business management.
The papers which entered this book were conducted by the researchers from Turkiye, Australia, India, Tanzania, Pakistan, Taiwan and other countries.This wide international representation of the studies is of a definite value for global academic community working and conducting research in the related areas.
The studies are published in the authors' versions after a rigorous process of the blind double peer review. The authors are responsible for the research design, accuracy of the data and language of their studies. The editorial board and scientific editors may not agree with the authors' views laid out in the papers, accepting a plurality of visions and approaches.

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Table of Contents

Preface

This Book of the Conference Proceedings represents the work of the contributors to APBM 2024, 5th International Conference on Applied Psychology and Business Management which was held in a blended mode on 10 - 12, October, 2024, with the main centre in Bursa, Turkiye.

APBM 2024 was organised by IATELS - International Association for Technology, Education and Language Studies, in partnership with Galgotias University (Greater Noida, India) and supported by STARTINFORUM International Business Consultancy (Turkiye).

The conference framework and concept were developed by the Committee Board of IATELS, and organising committee of APBM.

The conference embraced studies and presentations from the representatives of nine countries including India, Turkiye, Germany, Australia, Taiwan, Mexico, Nigeria and other countries.

The conference speakers presented their research on global economic transformations, gender issues, AI in business management, research and educational development in different countries, urbanisation, criminality, and other topics which are on the top of the research interest nationally and internationally.

We would like to express our deep gratitude to all the conference partners and participants and namely to Prof. Dr. Anuradha Parasar, Dean of the School of Liberal Education of Galgotias University (India), Dr. Tomayess Issa (Curtin University, Australia), Dr. Nadia Anwar, Dean of the School of Liberal Arts (University of Technology and Management (Pakistan) for their valuable contribution to organising the conference.

The speeches and presentations which were included in to the conference program discussed a variety of topics within organisational psychology and business management, new paradigms of the economic relations and gender roles, factors affecting the productivity and professional development, the influence of AI on the production processes, attitudes and perspective developments in all spheres of social life and economy.

About one hundred participants from eight countries joined APBM 2024 and created a truly international academic platform for sharing ideas and experiences in applied psychology, business management, economics, AI in organisation and production, technological developments, changes in gender roles and other related issues.

This Book of the Conference Proceedings includes selected full papers which were accepted for publishing after a rigorous double blind peer review.

Special thanks to the experts who participated in the reviewing of the papers and shared their recommendations on improving the quality of the manuscripts and preparing them for publication:

- Dr. Tomayess Issa, Curtin University, Australia
- Prof. Dr. Hamit Coskun Bolu Abant Izzet Baysal University, Turkiye
- Prof. Dr. Phalgu Niranjana, School of Business, ASBM University, Bhubaneswar, India
- Assoc. Prof. Dr. Nadia Anwar, School of Liberal Arts, University of Management and Technology, Lahore, Pakistan
- Dr. Rohini Balapumi, Business and Law, Curtin University, Australia

The studies are published in the authors' versions after passing the reviewing procedures.

The authors are responsible for the research design, accuracy of the data and language of their studies.
The editorial board and scientific editors may not agree with the authors' views laid out in the papers, accepting a plurality of visions and research approaches.

We hope this book will add to the development of the international paradigm of knowledge and practical approaches in the fields of organisational and business psychology, business management and human resources.

It is also believed to become a bridge to further research and case studies at the national and international levels.

Prof. Dr. Iryna Sekret
IATELS Committee Chair

STARTINFORUM
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Conference Committee

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Surrogate Patriarchs: A Threat to Gender Equity in Higher Education Institutes in Pakistan

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Abstract: *Literature on leadership contexts predominantly focuses on how females should develop a network of support required to address and counter the power of men, popularly and historically vested in patriarchy. However, due to widespread emphasis on socio-culturally fixated patriarchal dividends, we fail to identify another layer of oppression that is exercised by 'surrogate patriarchs' (Anwar 2024). My argument stems from all those instances where women's position, identity, and success are jeopardized not only by predominantly patriarchal set-up but also by other women of society who acquire the persona of patriarchy to act like or on behalf of men. Although a plethora of research deals with inter-female negative competition, due to concealed nuances of gender inequalities, it becomes crucial to deconstruct the practices and thinking patterns that produce these inequalities in the Higher Education sector, especially in the South Asian context. To have a meta-awareness of stereotypical and deceptive behaviour can lead to better understanding of female agency and its role. Mavin et al (2014) provide the conceptual foundation to this study for the analysis of survey conducted to acquire female academic professionals' perceptions about their own and male gender.*
Keywords: *Inter-female competition; surrogate patriarchy; gender equity; higher education; female agency*

1. Introduction

The history of feminist awakening, although met with phenomenal success in many ways, can still be questioned on the grounds that it somehow limited its own scope by vesting power of defining womanhood to a group of women, who inadvertently created and promoted an alternative power cohort working against the principles of feminism. From the perspective of theories promoting feminism, the root cause of male dominance has been those social behaviours that favour and perpetuate patriarchy. However, Loya et al (2006) attribute this perpetuation of patriarchy to female hostility which "is a destructive comparison mentality women sometimes exhibit when they feel inferior to another woman in some way" (p. 67). What remains backgrounded is the influence of those 'surrogate patriarchs' (Anwar, 2024) who cause gender polarization in society. In other words, in certain contexts women adopt the behavioral patterns of men and act either on their behalf or like them to enjoy the patriarchal power and gain benefits by using it. Although men have been held responsible for propagating images and attributions that are favourable to the continuance of their control, women can be seen, at times, working behind these control panels and augmenting male thinking. In this paper, I discuss this intra-gender phenomenon by drawing from Mavin et al's research that focuses on how individuals develop habits by observing from others' negative behaviours such as jealousy, malice and competition and feel threatened by other women's success which can potentially damage their self-efficacy.

2. Objectives

The purpose of this study is:

- To deconstruct the practices and thinking patterns that produce surrogate patriarchs perpetuating inequities in the Higher Education sector, especially in the context of Pakistan
- To examine the role of female agency that augment societal expectations placed on women contributing to inter-female hostility

3. Literature Review

To have a meta-awareness of stereotypical behaviour directed towards the same gender can lead to better understanding of female agency and its role. Mavin, Williams and Grandy's research explore "the hidden aspects of gender [that…] contribute to a greater understanding of how gendered organizing contexts construct negative relations between women, and how such relations emerge through everyday organizing" (2014, p.1). No doubt the systems in place help promote negativity among females but it is through female's own agency that such organizing principles can change and promote conducive environment for teacher-leaders to sustain their good practices.

Literature on leadership contexts predominantly focuses either on how females should develop a network of support required to address and counter the power of men or devise strategies to voice their subservient position under the looming shadow of their male counterparts in leadership roles. However, we often fail to identify another layer of oppression that is exercised by "surrogate patriarchs" (Anwar, 2024), from which phenomenon such as 'inter-female hostility' (Henshaw et al, 2018), '*within*-group aggression' (Johnson & van Vugt, 2009), 'intra-gender hostility' (Chesler, 2009), and 'female intrasexual competition' (Reynolds, 2018) emerge.

The argument in this paper stems from all those instances where women's position, identity, and success are jeopardized or threatened not only by predominantly patriarchal set-up (Crimmins et al 2023) but also by other women of society whose influence starts from home and then spreads over to their professional lives. Female hostility against same gender is a well-researched phenomenon (Chelser, 2009; Tulshyan, 2012), but its investigation in the higher education context, although researched, is mainly directed towards issues such as aggressive workplace behaviour in the context of a rural community college with a focus on "status and achievement, social and workplace hierarchies, and insecurity and competition" (Cournoyer, 2022). Another research takes into account the relational aggression among female colleagues in their respective institutions (Allen and Flood 2018), while the diachronic shift from 'Queen Bee effect' to 'self-group distancing' among female professionals is explored by Faniko et al (2020). Due to concealed nuances of gender inequalities, it becomes crucial to deconstruct the practices and thinking patterns that produce these inequalities in the Higher Education sector, especially in the context of Pakistan's Higher Education Sector.

Several studies highlight complex forms of female hostility triggered by factors such as position seeking behaviour leading to negative competition, identity threat that results in demoralizing the other female colleagues, and an urge to excel by eliminating the competitors. This threat can develop even by seeing other women getting empowered (Roy et al, 2023). Reynolds' (2021) research explores the strategy of gossip used by women to undermine female competitors and gain advantage over them in professional contexts. From the perspective of Susan Fiske and Peter Glick (1995), women's relationship with each other acquires an ambivalent status since they can both be supportive and hostile towards other of their kind in different contexts. Reading the same issue from another angle. Caroline Deli et al (2024) associate female-hostility to learned social behaviours that may consequently put competitive pressure on females. Although conducted in the political leadership context, Håkansson's (2023) study sheds light on how in leadership positions, females are likely to face greater hostility from both men and women.

From the above, a few questions become crucial such as who perpetuates patriarchy, who constructs stereotypical mentality, and who creates gender hierarchies, which ultimately cause inversion and in certain contexts subversion among a female's relationship with another female. In order to examine this phenomenon, my study is supported by a survey conducted to acquire female academic professionals' perceptions about their own and male gender. Moreover, it not only approaches the phenomenon from the perspective of those subordinates who consider female leaders as threatening but also from the perspective of the females whose leadership is threatened by female insubordination stemmed from latter's jealousy/malice towards the former. Abramson (1975), Legge (1987), Nicolson (1996), and Mavin et al (2014) have done useful studies in understanding intra-gender hostility in the organizational and management contexts. I will, however, particularly see how patriarchy dons the façade of matriarchy / feminism and becomes 'surrogate' to patriarchy.

4. Conceptual Framework and Methodology

Conceptual framework developed by Mavin et al (2014) aims to reveal the concealed gender behaviours and contexts leading to negative relations between females. Hostility between females is highly likely to pose threat to the progress of one of the parties contributing to the continuity of inequitable professional environment. Realizing the significance of deconstructing the fixed male-female rivalry, Mavin et al, examine how women when faced with competition can withdraw their friendship, support and solidarity for other women. This negative competition exacerbates due to the patriarchal structures in place which compel females to adopt or emulate competitive behaviours that lead men to success. Another factor that reinforces the same gender hostility is internalized female misogyny, which prompts women to degrade other women both at personal and professional levels. This act provides such women an opportunity to align themselves with men and perpetuate patriarchal trends.

The framework will inform the results by allowing the researcher to see how 'women themselves operate within androcentric cultures […to] help perpetuate sexist attitudes and practices against other women' (Lazar, 2015, p. 12), particularly focusing on how women's position, identity, and success are jeopardized by other women and the need to deconstruct the practices and thinking patterns that produce these inequalities in the Higher Education sector.

4.1 Survey Tool

A qualitative preview of the survey results was compiled with the help of data collected directly from the Female Faculty and Staff of private sector universities in Lahore through convenient sampling. The survey, based on 37 items, employed Likert scale involving the following categories: always, often, sometimes, rarely, never. The survey included closed ended questions and one open ended question, aimed to grasp the perceptions of the target audience and to trace those patterns that may satisfy the objectives of this study. The survey was administered with the help of online survey tool "Google Forms" circulated through email eliciting 76 responses from the female faculty belonging to two public sector universities.

4.2 Results/Findings

The first two questions aimed to acquire information about the affiliation of the respondents with the school within their respective universities and the number of years they have spent in their current organization.
According to the collected responses, 34% of the respondents have been a part of their current organization for less than 05 years, 31% respondents have 6-10 years of experience, 26% respondents have 11-15 years' experience, while 09 % have been associated with their organization for more than 16 years. Based on this information, it can be deduced that the data set is the representative of all age-groups. The responses about affiliation to specific departments and schools was kept for further context-based thematic studies.

The rest of the 34 questions with their results are given below:

Table 1. Survey questions with responses and explanation

Q. No.	Survey Question	Findings
3	My female colleagues create a conducive environment for me to grow.	75% affirmed this happens 'always' or 'often'. However, the rest experience this support less frequently, suggesting a generally positive perception of collaboration among colleagues. However, this finding does not completely align with the response to Q9.
4	My female colleagues compete with me positively.	The response suggests a largely positive view of competition among female colleagues, with 63% indicating they experience this 'always' or 'often'. However, a notable number 21% feel competitive interactions are less frequent, pointing to a mix of experiences. Overall, the results highlight a generally healthy dynamic, though a room for substantial improvement in fostering positive competition is implied.

5	My female colleagues compete with me negatively.	The findings suggest that 14% believe it happens ‘always and often”, 36% experience this ‘sometimes’. The majority 50%, feels it ‘rarely’ or ‘never’ happens. 50% of the respondents are oriented towards a grey area which again fails to sync with Q3.
6	My female colleagues join hands with my male colleagues to hinder my progress.	70% of the respondents believe this ‘never’ happens or ‘rarely’ happens, while 11% report that it sometimes happens, and 9% believe it happens ‘often’ or ‘always’. Overall, the data suggests that most individuals do not perceive their female colleagues as collaborating with male colleagues to impede their progress. However, 20% of the respondents feel threatened in various contexts and phases of their career.
7.	My female colleagues create opportunities for me to grow professionally.	The data shows that a significant portion, 45%, believe this happens ‘often’, while 28% feel it occurs ‘sometimes’. 14% of the respondents say it ‘rarely’ happens, and 5% believe it never happens. Only 8%, feel that their female colleagues ‘always’ create growth opportunities. Overall, the majority of respondents feel their female colleagues frequently or sometimes contribute to their professional development.
8.	I have to act masculine in order to voice my opinion at my work place.	37% of the respondents say they never feel the need to act masculine, while 29% believe they sometimes do. 17% of the respondents feel they often need to act masculine, and 12% say they rarely do. A smaller portion, 5%, feel they always have to act masculine to voice their opinion. Overall, the responses are varied, with a notable percentage feeling this pressure at least occasionally. The question approaches the argument from the perspective of masculinity that leads to surrogacy of patriarchy.
9	My growth makes my female colleagues jealous leading to covert or overt hostility.	The largest portion, 38%, indicates that respondents ‘rarely’ experience this, while 22% sometimes feel this way. A smaller group, 15%, often faces this issue, and 4% always do, but 21% never perceive hostility from colleagues. The results reflect that females frequently feel that their professional growth incites jealousy among female colleagues, leading to covert or overt hostility. This factor causes demotivation to the female leaders who despite their sincere efforts remain the target of their colleagues’ hostile attitude.
10	My male colleagues do not like to see me promoted to higher positions.	The majority, 44%, believe they never encounter this issue, while 27% experience it ‘rarely’. About 16% feel it happens ‘sometimes’, 8% often, and a small 5% always perceive this negative sentiment from male colleagues. Male perspective in Q10 is taken to show comparison and validate the responses to Q11.
11	My female colleagues do not like to see me promoted to higher positions.	38% respondents ‘rarely’ experience this, while 21% ‘never’ encounter such sentiment. On the other hand, 19% ‘’sometimes feel this way, 17% ‘often’ sense it, and 5% ‘always’ perceive negativity from female colleagues when promoted. Comparison shows duality of responses and is reflective of the ambiguity inherent in females’ minds. It also shows that females are threatened more by the same sex who covet their colleagues’ positions.
12	My female colleagues show solidarity and sisterhood if I am in trouble.	The data shows that 40% of respondents feel that this support is ‘often’ present, while 30% believe it is ‘always’ there. However, 26% experience it only ‘sometimes’, with 3% ‘rarely’ and 1% ‘never’ feeling supported. 30% not feeling supported is significant. The results corroborate the responses to Q11.

13	I prefer to work under/with female supervisors/ leaders than male supervisors/ leaders.	While 42% ‘sometimes’ prefer female leaders, 25% ‘never’ prefer them, and 11% ‘often’ do. On the other hand, 17% ‘rarely’ have this preference, and 5% ‘always’ do. The results reveal mixed preferences for working under female supervisors/ leaders.
14	I prefer to work under/with male supervisors/ leaders than female supervisors/ leaders.	A significant 40% ‘sometimes’ prefer male leaders, while 25% ‘often’ prefer them, and 18% ‘always’ do. Conversely, 9% ‘rarely’ prefer male supervisors, and 8% ‘never’ prefer to work with them. The responses to Q13 & Q14 show that females generally prefer male leadership. This may also suggest a more balanced distribution of preferences compared to female leadership.
15	I face male misogyny at my work place.	41% respond ‘never’, 3% respond ‘always’, 22% say ‘sometimes’, 30% respond ‘rarely’ and 4% say ‘often’. 71% do not face this issue significantly.
16	I face female misogyny at my work place.	31% respond ‘never’, 3% say ‘always’, 8% respond ‘often’, 33% say ‘sometimes’, 25% respond ‘rarely’. This comparative pair of questions (Q15 & Q16) reflect that female misogyny is more prevalent than male misogyny.
17	I like to see my female colleagues rising to senior leadership positions.	A significant majority, 83%, of respondents (combining ‘always’ and ‘often) support the idea of female colleagues advancing to senior leadership roles. 9% of the respondents express moderate support by responding ‘sometimes’. 8% show limited support by saying ‘rarely’. No respondent selected ‘never’, indicating that there is no outright opposition to female leadership. Overall, this suggests that most respondents are in favor of female representation in senior leadership, though a small percentage show reluctance. However, compared to previous responses the response to Q17 appears fabricated.
18	I trust my female colleagues more than my male colleagues.	The data shows 42% of respondents (combining ‘always’ and ‘often’) indicate a strong trust in their female colleagues over their male colleagues. 33% express a moderate level of trust by responding ‘sometimes’. Only 12%, show limited trust by saying ‘rarely’.13% of the respondents say ‘never’. The findings show that a notable portion of respondents trust their female colleagues more than male colleagues. However, lack of trust is also visible.
19	I trust my male colleagues more than my female colleagues.	The data shows that 25% of the respondents (combining ‘always’ and ‘often’) indicate a strong trust in their male colleagues over their female colleagues. 28% express a moderate level of trust ‘sometimes’. Only 29%, shows limited trust by responding ‘rarely’, 18% of respondents ‘never’ trust. The findings show that a notable portion of respondents do not trust their male colleagues more than female colleagues.
20	I prefer forming professional ties or socializing with my male colleagues.	The data shows 29% of respondents (combining ‘always’ and ‘often’) prefer male colleagues for socializing or professional relationships, whereas 61% respondents fall into the "rarely" and "sometimes" categories and 10% of the respondents will ‘never’ prefer forming professional ties with male colleagues. The answer is reflective of religious and socially accepted modest behaviour expected of females. The observation of the researcher, however, shows a different preference.

21	I prefer forming professional ties or socializing with my female colleagues.	The data shows that 93% of the respondents prefer forming ties or socializing with their female colleagues, with the majority falling into the 'always' 'often' and 'sometimes' categories. The 'never' and 'rarely' responses are minimal that is only 7%. The question collated professional and social ties to which most of the females, contrary to Q20, responded in affirmative. It is highly likely that the respondents have focused more on social ties than professionally driven relationships.
22	My male colleagues get better opportunities at my work place.	The result shows that a majority of the respondents, 72%, (combining 'always', 'often', 'sometimes') perceive that male colleague at their workplace have an advantage in terms of opportunities, whereas 28% people believe that it 'never' happens or that it happens 'rarely'.
23	My female colleagues get better opportunities at my work place.	The result shows that a majority 72% (combining 'always', 'often', 'sometimes') perceive that female colleague at their workplace have an advantage in terms of opportunities, whereas 28% people believe that it 'never' happens or that it happens 'rarely'. Interestingly in both cases, i.e., Q22 & Q23, 72% of the respondents have said that male/female colleagues get better opportunities at workplace. It means that the respondents do not have a clear perception of available and offered opportunities.
24	I take my male and female colleagues as individuals and do not judge them in terms of gender.	The majority 81% (combining 'always' and 'often) of respondents appear to adhere to the principle of not judging colleagues based on their gender. The data suggests a strong positive perception towards gender equality and individual treatment of colleagues within the workplace.
25	If I have a choice I will work in all-female institute/ organization.	The data shows that 15% of the respondents will prefer working in female organizations, 13% falls in 'sometimes' category; while the majority 72% lie in the 'rarely' and 'never' categories. The findings suggest that while a minority of respondents would prefer an all-female workplace, the majority favor mixed-gender environments. This indicates a preference for diversity and inclusion in the workplace.
26	If I have a choice I will work in all-male institute/ organization.	The data shows that 13% of the respondents will prefer working in male organizations, 13% fall in 'sometimes', category whereas the majority 76% lies in the 'rarely' and 'never' categories. The findings do not correspond with the responses to Q25.
27	I prefer to work at mixed-gender institute/ organization.	The data suggests that an overwhelming majority 92% of the respondents ('always' and 'often') favor mixed-gender workplaces, 4% respond for 'sometimes', whereas 4% fall in 'rarely' category. This indicates a strong preference for diversity and inclusion in the workplace.
28	My female colleagues take undue benefits by acting feminine.	The largest portion (32%) of the respondents believe this happens 'rarely', while 30% think it occurs 'sometimes'. 17% say 'never', while a small portion thinks it happens 'often' (14%) and 'always (7%). The results illustrate perceptions regarding female colleagues occasionally taking undue benefits by acting feminine.

29	My female colleagues work extra hard to achieve success or excel.	The findings show that 50% of the respondents ('always' and 'often') think that their female colleagues work hard to achieve success, 29% fall in 'sometimes', 17% respond 'rarely', while 4% lie in 'never' category. The results show that a majority of respondents perceive female colleagues as working extra hard to achieve success. This indicates a positive perception towards female colleagues' dedication and work habits. But it also raises a question about females not supporting each other under certain circumstances.
30	My female colleagues are manipulative and play negative politics.	The data shows that 22% of the respondents ('always' and 'often') think that their female colleagues play negative politics, 32% fall in 'sometimes', whereas majority 48% ('rarely' and 'never') of the respondents do not perceive female colleagues as manipulative or playing negative politics. This indicates a positive perception towards female colleagues and challenges harmful stereotypes.
31	My male colleagues are manipulative and play negative politics.	The data shows that 13% of the respondents ('always' and 'often') think that their male colleagues play negative politics, 30% fall in 'sometimes', whereas majority 57% ('rarely' and 'never') of the respondents do not perceive male colleagues as manipulative or playing negative politics. This indicates a positive perception towards male colleagues and challenges fixed stereotypes. However, the response does not correspond with the response to Q16.
32	I cherish my female colleague's success and promotion.	The data shows that a majority of respondents 88% ('always' and 'often') support and celebrate the success and promotion of female colleagues, while only 12% falls in 'sometimes' category. This indicates a positive perception.
33	As a female, I am viewed by my male colleagues as less competent.	The results illustrate female respondents' perceptions of being viewed as less competent by male colleagues. A notable 35% say this 'never' happens, while 24% feel it 'rarely' occurs. Meanwhile, 25% believe it happens 'sometimes', suggesting a mixed perception. Smaller portions indicate that they are 'often' (9%) or 'always' (7%) viewed as less competent, showing that a minority consistently experience this bias. This complex feeling may be one of the reasons surrogate patriarchs use manipulative tactics to gain significance in the work place contexts,
34	I enjoy a bond with my other female colleagues same as men do among themselves.	The data shows that 75% ('always' and 'often') of respondents enjoy a bond with their female colleagues same as men, 17% fall in 'sometimes' category. The findings indicate a positive perception towards female camaraderie and workplace relationships. The response does not fully sync with some of the previous responses, though.
35	I enjoy emotional intimacy with my female colleagues.	The results reflect individuals' responses regarding emotional intimacy with female colleagues. A significant 39% feel that they 'often' enjoy such intimacy, while 24% experience it 'sometimes'. Another 22% state that they 'always' have this connection, indicating a notable portion. Meanwhile, 11% say it 'rarely' happens, and only 4% report 'never' experiencing emotional intimacy with female colleagues. The results show that most respondents do have some level of emotional connection.
36	I am comfortable sharing my emotions with my male colleagues.	The data shows that only 8% respondents feel comfortable sharing their emotions with male colleagues, while 22% think sometimes, while 70% respondents do not feel comfortable sharing their emotions with male colleagues.

37	This question provided space to the respondents for any other comment that reveals their opinion about their female colleagues and their relationship with them. The responses are followed by the factors that may have prompted their responses (given in parenthesis).	R1: “They are usually very helpful and supportive but only a few turn out to be surprisingly thankless” (lack of trust) R2: “We all are under the same cloud in terms of female colleagues the ones having same socioeconomic grounds are with more support compared to rest” (opportunities depend upon socio-economic position) R3: “As a professional, we must adhere our office culture and values to promote positivity among the colleagues. We believe in team building, transparency, growth, collective measurable impact and collaboration” (positive take on inclusive and communal growth). R4: “I am more comfortable working with female colleagues” (reflective of traditional mind-set, especially for veiled females). R5: “Just do your job, earn money and respect, never expect and trust too much from your female colleagues” (Lack of trust). R6: “Female colleagues are more competitive than male colleagues” (the response is reflective of negative competition females have to face from their same gender). R7: “Never tell your salary to your colleagues as it builds the conflicts between you and your colleagues” (Lack of trust). R8: “They are super fine; I enjoy working with female colleagues it makes me feel comfortable because probably I could feel that there are people around me who are facing more or less similar circumstances so if they can do it, I can do it as well’ (sense of camaraderie). R9: “So far by the grace of ALLAH I haven't experienced much difficulty interacting with majority of my male and female colleagues. I think it highly depends on the organizational culture and environment which is given to the workforce by the higher authorities. I have encountered some difficult colleagues both male and female in the past who played politics but since the organizational culture didn't encourage that's why I didn't face a lot of difficulty” (a forward-looking and balanced attitude/perception). R10: “I think mentality matters more than gender” (belief in individuals). R11: “The peculiar behavior depends on individual not on genders” (belief in individuals). R12: “I have hardly noticed any gender discrimination at my work place. I feel quite comfortable and secure” (Positive experience). R13: “Too much Politics” (Negative experience). R14: “All five fingers are not equal, but it's my opinion that most workplace problems are due to female attitudes. A most important observation is that a male boss is always a better leader than a female” (tendency to become a surrogate patriarch). R15: “My experiences with my female colleagues have always been good” (positive experience). R16: “There are couple [of] questions, which don't go with our department. The issues are the ratio of male colleagues as compared with female [which] is very less to formulate an opinion….I believe there must [be] a mix of almost equal ratio to make this survey fair and unbiased” (point out the limitation of the research since the responses majorly came from a department having more females). R17: “Every individual is a different human being. So, I believe most of the time it is not male or female rather the kind of background and the nature one has got make all the difference” (belief in individuals). R18: “It's all fun until you share some details from your personal life. That's when it becomes toxic” (Lack of trust). R19: “Don't get jealous, and work on yourself if you feel any kind of jealousy” (self-reformatory attitude).

5. Discussion and Conclusion

Surrogacy, in the context of this paper implies the acquisition of the role socially attributed to another agent. Female professionals in their hostility and malice against their same gender, attain the role of patriarchy and enervate the position of their female leadership. This became obvious from the survey results and qualitative remarks given by the respondents in which lack of trust in female colleagues, fear of sharing personal information, female misogyny, jealousy, among other factors turned out to be significant. The results also corroborate Chesler's (2001) argument that women "do not like, trust, respect or find [other women's] statements to be credible" (2). Mavin et al while drawing from several psycho-social researches conclude that in senior leadership positions men get positively influenced due to their good relationship with other men while females suffer owing to the hostility existing between them. In this context, they have to fight on dual fronts. In order to fight for the factors, such as position, identity, and success, they have to first pass through the surrogate patriarchs who not only jeopardize their progress but also vie for the position held by their female colleagues. This also became obvious from the inability of the female respondents to grasp their own perception about other female colleagues, thus making them respond contrarily to the questions of similar nature.

The survey, although conducted on representative respondents, reveal that inter-female hostility/aggression is common in higher education, affecting female academics. It can manifest in forms such as gossip, exclusion, belittling, and competition for resources and recognition. It may be caused by professional and societal expectations, internalized misogyny, power dynamics, and institutional cultures but also due to role reversal that makes the victims as agents of oppression. The phenomenon, thus, impacts mental health, job satisfaction, career advancement, and overall well-being of female academicians.

In summary, the conceptual framework presented by Mavin, Williams, and Grandy which aims to bring to the fore the problematics of female versus female relationship in organizations helped this study in understanding how competition, jealousy, female identity, and misogyny, are influenced both by embedded patriarchal behaviors and broader organizational structures. The study underscores the significance of developing strategies to address and mitigate inter-female hostility in higher education for which institutional support and inclusive cultures can act as the key players.

6. Recommendations

Sustainable Women Empowerment through 'She*for*Her' project is proposed to mitigate the influence and agency of surrogate patriarchs. The focus of this qualitative study is to examine how shifts through knowledge and thought leadership can prove helpful in cultural transformation. I argue that these shifts are particularly useful in countering the phenomenon of inter-gender hostility and how the organizational behaviour is affected by stakeholders' lack of awareness about it. Two aspects, 'shifts through knowledge' and 'thought leadership' stand out in relation to actions that can be taken to empower females in professional contexts, in particular educational contexts. Most of the curriculum is tilted towards inter-gender inequalities hence taking the nuances of gender inequalities for granted. The organizational leadership is required to bring changes to encompass a 360-degree preview of gender by inculcating materials, case studies, evidence, research, and content that detaches itself from stereotypical philosophies by deconstructing the 'isms'. This study proposes that new sustainable and inclusive educational initiatives should be a part of curriculum and media projections. Moreover, institutional policies inclined towards training programs, mentorship and support networks for female academics which aim to promote inclusive departmental cultures and encourage open communication and conflict resolution should be introduced.

Inter-female hostility can also be explored across diverse demographics through intersectional perspectives. Context-based studies at departmental level can also help in tapping the events and instances of female aggression.

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The Hidden Cost of Female Psychopathic Behaviour: A Case Study of Tasmanian Welfare Organisations

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Abstract: *The Tasmanian Welfare Industry is made up of numerous organizations assisting people in need with emotional and practical support. The Welfare Workforce is a female dominated industry known to attract people high in empathy. Studies have shown when high numbers of women work together, they are more likely to experience bullying behaviour. The present study aimed to understand this concept and how bullying behaviour by females, toward females can be psychologically harmful. In this qualitative study 13 (11 females) Tasmanian Welfare Employees participated in semi-structured interviews about working with a female bully who displayed challenging behaviours. Eleven of 13 participants discussed difficult females who demonstrated psychopathic bullying behaviours which caused significant damage including unemployment, suicidality, depression and career sabotage. A thematic analysis was conducted resulting in four main themes; Female psychopathic bullies (1) disguised behaviour behind friendships and victimhood, (2) treated others with distain and judgement, (3) impacted participants psychologically and professionally, and (4) were dishonest and used relational aggression, manipulation and gaslighting. The findings of this study highlight the need to better understand the tactics of female bullies in the Welfare Workforce, an industry where kindness is essential.*
Keywords: *workplace bullying; welfare workforce; gender differences; organisational culture; primary psychopaths*

Introduction

Welfare Organizations provide a place to build rewarding professional relationships with likeminded individuals. In the Welfare Workforce this means working alongside people who have care and empathy for those in need. Working to support fellow human beings can be positively life changing. However, no workplace is without a downside and in the Welfare Workforce this can include bullying behaviours in part due to the 83% female workforce (AIHW, 2023). Studies have shown that female dominated workplaces are known to be high in bullying behaviours between women, impacting career progression and workplace relationships (Sheppard & Aquino, 2017). Females are usually natural allies (Mavin, 2008) however when they are placed in a competitive environment, females will distance themselves from the opposition (Faniko, Ellemers & Derks, 2021). Nevertheless, it could be assumed that an industry high in females with a focus on helping others would have minimal issues with difficult and even psychopathic bullying behaviours. However, studies have shown that when placed in large groups women can use bullying behaviour to achieve their goals, with research suggesting that 70% (Harvey, 2018) to 95% (Marques & Coffman, 2021) of women report being bullied by other women. These figures highlight the importance of understanding the issue of female psychopathic bullying behaviour in female dominated industry.

This study examined the issue of female bullying behaviour in the Welfare Workforce utilizing the industry in Tasmania, Australia, where it has been referred to as the *Community Services Industry*. This paper will outline this qualitative study which included interviews with welfare professionals who have experienced trauma because of female bullying behaviour. Moreover, this study focused on high levels of difficult behaviour using a measure of primary psychopathy to identify the severity as well as looking at relational aggression, job satisfaction and outcomes for both the participant and the bully. This study provides vital insight into the issue and how it has been significantly overlooked that females who work within helping professions may display destructive and even psychopathic behaviours in the workplace.

1. Background

The issue of workplace bullying is common, however in an industry which focuses on assisting others challenging behaviour is unexpected. It is even more astonishing that primary psychopathic behaviour would be present given it is characterized as a lack of empathy and a willingness to harm others without remorse (Clarke, 2005). Moreover, the Welfare Workforce is high in females who have been known to experience high levels of workplace bullying in their same gender group (Harvey, 2018 & Marques & Coffman, 2021). At the extreme end, bullying can be displayed in psychopathic traits. Some who displays primary psychopathic traits can function in day-to-day society, but they do so with no empathy, a lack of remorse for their actions and the ability to harm others for personal gain (Clark, 2005). These traits in females are often displayed as relational aggression, gaslighting and manipulation when targeting others in the workplace. Hence gender bullying and the relationship to psychopathic traits would benefit from further investigation.

1.1. Gender and bullying behaviour

Workplace bullying leaves employees feeling depressed, unmotivated and defeated. Gender balance in the workplace can contribute to the amount of bullying, with studies showing that when females are in low numbers in an organization, they will often support each other (Mavin, 2008). Nevertheless, where the industry is high in female employees, women often become competitive and seek to hold other women back to gain professional superiority. Females are more likely to target other females using relational aggression as a tool. Relational aggression is the act of lowering one's social standing through false gossip and rumours (Reardon, Tackett & Lynam, 2018). Another tool females use is gaslighting which is where a person can appear caring but instead convince the target that they are both incapable and mentally unstable (Kurter, 2020). In comparison, male primary psychopaths will use overt behaviours such as distain, raising one's voice and public humiliation (Thomson, Bozgunov, Psederska, & Vassileva, 2019). These differences may be attributed to gender and how primary psychopathy manifests. The research suggests that males are often born with the ingrained psychopathic traits whereas females develop psychopathic traits as a defence mechanism after a trauma experience (Colins, Fanti, Salekin & Andershed, 2017). How primary psychopaths display aggression is the key difference in male and female psychopathic behaviours (Wynn, Høiseth, & Pettersen, 2012 & Colins et al, 2017).

1.2 Primary psychopathic bullying behaviour

A primary psychopath is a person who displays psychopathic traits in the everyday population often working and living a life filled with family and friends. These individuals can be categorized as having a personality which is focused on their own self-interest with no regard for the careers and emotions of others. They lack empathy, self-insight, and the ability to feel compassion (Hare, 1999). A primary psychopath should not be confused with a secondary psychopath who lacks the self-control to evade the justice system and are often individuals who demonstrate anti-social criminal behaviour. A primary psychopath finds it easier to both control behaviour and be more covert in their approach to gain power. Although male and female psychopaths have similar traits, there are differences in the way these traits manifest and are displayed to the outside world (Czar, Dahlen, Bullock, & Nicholson, 2011 & Kreis & Cooke, 2011). Women are more covert in nature and men are more overt in their aggression (Czar, et al, 2011).

1.3 Present study

The aim of the present study was to determine if female bullying behaviour was an issue in the Welfare Industry at an extreme level by applying a primary psychopathic lens to the behaviour traits. This included the review of in-depth personal case studies where behaviours were described and the impact on the participant was discussed. The Welfare Industry was selected as a female dominated Industry to allow for the review of female-to-female bullying and the notion of high levels of difficult behaviour between colleagues.

2. Methodology

2.1 Participants

Interviews were conducted with thirteen individuals (females: n=11,84.6% and males: n=2,15.4%), they ranged in years of age from mid-30's to 70's. All participants discussed a female Welfare Industry colleague. The participants worked in four different employment areas, non-government (n=7, 53.8%), government (n=1, 7.7%), education (n=3, 23.1%) and self-employment (n=4, 30.7%).

2.2 Primary psychopathy measurement

To measure the severity of the behaviour a primary psychopathic measure was used. The *Psychopathy Measure -Management Research Version 2* (PM-MRV2) (Boddy, Miles, Sanyal, & Hartog, 2015), was selected as the most appropriate measure for workplace analysis and research. The ten PM-MRV2 items were scored on a three point scale (displayed, somewhat displayed and not displayed), which were: (1) untruthful and insincere, (2) a cheating personality, (3) totally egocentric, (4) has no remorse about how their actions harm other employees, (5) emotionally shallow, (6) unresponsive to personal interactions, (7) refuse to take responsibility for their own actions, (8) lack of self-blame and self-insight about own behaviour, (9) superficial charm and apparent intelligence, (10) calm, poised and apparently rational.

2.3 Procedure

Participants were recruited through Tasmanian Welfare Organizations and social media (Facebook and LinkedIn) with the following requirements: have worked or work in the Welfare Industry for more than two years and had not left the industry in the past six months. This was to ensure that information was as recent as possible to minimize recall bias. The researchers communicated with the potential participants by phone and email where they were further explained the study and suitability was determined.

At the interview a confidentiality agreement was signed, before participants were provided with the list of primary psychopathic traits from the PM-MRV2 and asked to rate the difficult colleague they would be discussing. This list was de-identified as the PM-MRV2. Open ended questions were utilized for the interviews, which included *describe your current and previous experience working in the Welfare Industry? Consider the toxic person who impacted you the most and describe their personality characteristics, how they impacted others and you, including mental health, workplace well-being and job satisfaction?* Finally, the participants were asked for any further insights on their experience of working in the Welfare Workforce with difficult colleagues. These questions were designed to draw out examples of workplace behaviour which represented the traits of a difficult colleague while using the primary psychopathic measure as a baseline guide for severity. Interviews were audio recorded and transcribed for analysis.

2.4 Data Analysis

A thematic analysis was used to analyse the qualitative data using the transcripts from the interviews. The six-step thematic analysis process designed by Braun and Clarke (2006) provided a systematic approach to coding and developing themes. This process included 1) data familiarization, 2) initial coding, 3) theme search, 4) theme review, 5) theme defining and renaming and 6) results. This step-by-step approach allows for meaning to be found within a specific topic area at two levels: semantic (i.e., what the person has said with words) and latent (i.e., the underlying assumptions of what has been said) (Maguire & Delahunt, 2017).

2.4.1 Psychopathic measure of the difficult colleagues

The PM-MRV2 utilizes a cut off score of 75% (or above) to identify primary psychopaths with each of the items scored as follows: not displayed = 0%, somewhat displayed = 5% and displayed = 10%. The average PM-MRV2 score for the discussed difficult colleague who met the psychopathy score of over 75% was 93.5% (n=11). Four difficult colleagues scored 100% with all criteria displayed, five scored 90% and two had a score of 85%. The remaining two interviews discussed people not meeting the PM-MRV2 criteria had an average score of 53.9%. Figure 1 shows the individual scores for each difficult colleague discussed in order from highest (100%) to lowest (65%). The psychopathic, non-psychopathic point is shown with a dotted line indicating that the majority were in the psychopathic group. Figure 2 provides a breakdown of the results from the three-point scale for each difficult colleague discussed.

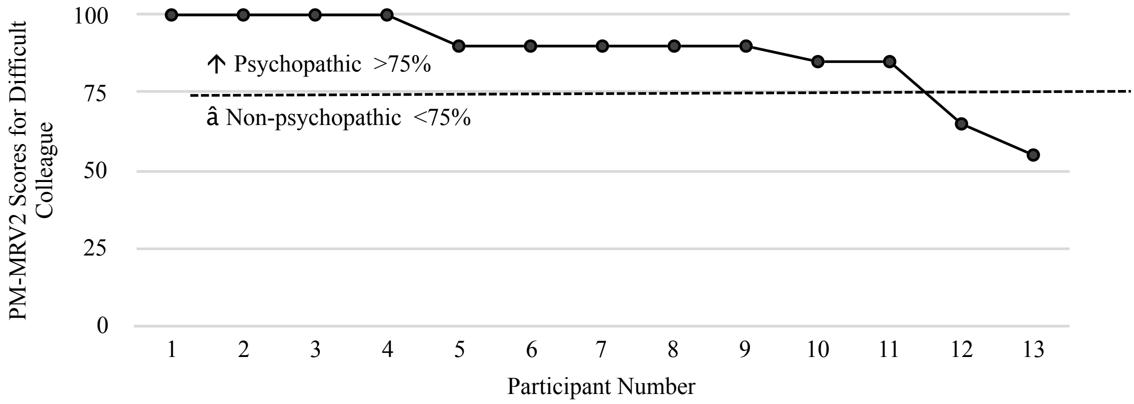

Figure 1. Difficult Colleague Psychopathic Scores for Each Interview Discussion
Source: Own work based on Author (Girkin), 2024

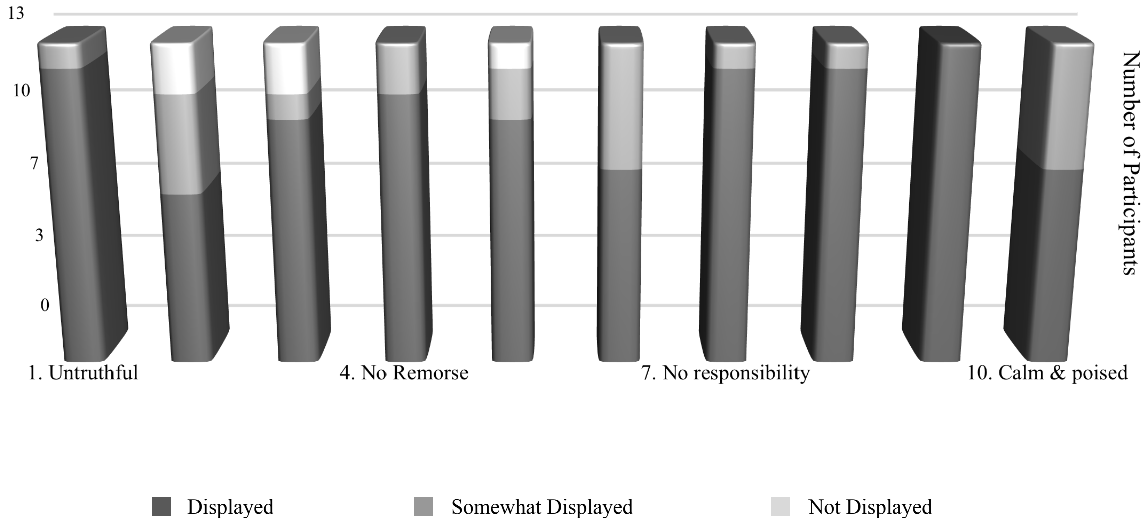

Figure 2. Number of Difficult Colleagues Discussed by PM-MRV2 Criteria
Source: Own work based on Author (Girkin), 2024

3. Results

The Welfare Industry in Australia is predominately female and as expected this resulted in participant discussions about difficult female colleagues only allowing for a deep analysis into difficult female behaviour which at times was psychopathic in nature.

3.1 Thematic analysis

3.1.1 Coding

Initial codes were grouped into three overarching areas including difficult behaviours, participant impact and organizational response. This resulted in sub-themes which were combined and filtered based on the number of transcripts leaving 14 sub-themes which are shown in Figure 3. Once sub-themes were developed, the final two interviews which did not meet the criteria were reviewed. Many of the same themes were present excluding the difficult colleague displaying victimhood behaviour which did not appear in either interview transcript.

3.1.2 Final analytical themes

The final phase of analysis was to look at the fourteen included themes and group them into board analytical themes which encompassed the findings in more refined terms. The process and transition through the thematic analysis coding process is shown in Figure 3, which includes the sub-themes and analytical themes. The four final analytical themes about the female difficult colleague were:

1. Difficult behaviours were often disguised behind relationships, friendships, and victimhood.
2. Difficult behaviours included dishonesty, relational aggression, manipulation and gaslighting.
3. The difficult behaviours impacted others psychologically, emotionally, and professionally.
4. Bullying behaviours included treating others with distain and judgement.

Sub-Themes → **Analytical Themes**

Difficult behaviours were often disguised behind relationships, friendships, and victimhood.

Female difficult colleague was initially likeable and friendly

Female difficult colleague displayed victimhood behaviour

Female developed relationships which supported their narrative and removed collegues who opposed them

Difficult behaviours' included dishonesty, relational aggression, manipulation and gaslighting.

Female displayed gaslighting and manipulative behaviour

Female was dishonest about work and blamed others for failures

Female used relational aggression

The difficult behaviours impacted others psychologically, emotionally and professionally.

Participant was not believed or supported by their employer

Career / employment was impacted by difficult persons behaviour

Behavior of the difficult colleague impacted the emotional well-being of others

Consequences were on the participant not the difficult colleague

Participant fearful or uncomfortable when near difficult colleague

Figure 3. Thematic Analysis Theme Development Map
Source: Own work based on Author (Girkin), 2024

3.2 Theme Definitions

3.2.1 Theme 1: Difficult behaviours were often disguised behind relationships, friendships, and victimhood.

Females who displayed difficult behaviour appeared to create and maintain relationships which aided their ability to disguise and sustain poor behaviour. This occurred through the indoctrination of others to gain and maintain professional and personal workplace support. When unsuccessful, the female sought to gain sympathy often resorting to stories of true or false accounts of victimization. By playing the victim role this led to increased support from others, in particular other females, who both sympathized and facilitated the narrative. This is highlighted in the following female participant quote:

> *"A bunch of women together, they develop their own ways of abusing power. I think they have their own way of doing it. And competing and abusing because really women are so capable of all of that. Really until women really own their own way of being, particularly with other women, they've got Buckley's of ever even being good leaders."*

3.2.2 Theme 2: Difficult behaviours included dishonesty, relational aggression, manipulation and gaslighting.

The female primary psychopath used a range of destructive behaviours to manipulate, degrade and confuse others such as gaslighting and relational aggression. Gaslighting included changing or withholding information from the victim leading to the victim questioning their behaviour and ability to undertake there assigned role within the workplace. Manipulation also played a significant role and included using personal, social, and professional information to damage the victim. One participant explained this well, *"(They're) a bit like a comedian, sweet as pie one minute, stabbing you in the back the next minute."* Hence these behaviours had a debilitating effect on the participant hindering career progression. One female participant who scored the difficult colleague at 100% on the PM-MRV2 scale said the following about a peer:

> *"You feel like you've been controlled, you know, you're not worthy. You don't have any skills. So how can you go for another job? When you're at your lowest point? How can you present yourself in a light that someone will employ you when you feel like you're broken?"*

The gaslighting coupled with manipulation on each occasion had the same result for the participant. A reduction in motivation and becoming apathetic toward work.

> *"It's meant to be about helping people or supporting people, I don't expect my colleagues to be my counsellors or anything, but just to feel safe and to honour what they say".*

Relational aggression was discussed with many participants describing the social exclusion and isolation endured during their time working with a difficult colleague. *"She worked steadily to undermine … with lots of whispers and negativity".*

3.2.3 Theme 3: The difficult behaviours impacted others psychologically, emotionally, and professionally.

The participant in each case was psychologically and emotionally impacted and many lost employment or resigned. Many participants became emotional and clearly remain impacted by their experience. Many had sought professional assistance to cope one said, *"I can't even walk into the place anymore, which is really sad".* Another participant discussed their state of depression and how what was happening at work effected every area of their life. Another said *"I didn't sleep well. I just ate way too much. I didn't really want to exercise or do anything".* Reactive responses by the participant appeared to moderate the behaviour of the primary psychopathic female both positively and negatively. Additionally, all the female participants talked about finding it hard to trust others in the workplace even when they moved to a new Welfare Organization. *"It's impacted my whole career on who I trust. Who I don't trust how I interact with managers".* The male participants were less impacted by ongoing trust issues. Several female participants talked about crying in their vehicle before, during and after work. As well as calling in sick to avoid contact with the difficult colleague. One participant said they called in sick once to avoid a three-hour car ride with the difficult colleague.

3.2.4 Theme 4: Bullying behaviours included treating others with distain and judgement.

The female difficult colleagues were often offensive, disrespectful, and degraded others. Some behaviours occurred directly to the person whereas other behaviours and comments were relayed via a third party. In many of the case studies the difficult colleague was amicable and only responded with distain once their agenda was interrupted. This triggering event often took the participants by surprise as it was at this point the female difficult colleague changed their behaviour and contradicted previous interactions. The lack of empathy was evident in each case study, for example *"If I got really upset ... it was like her eyes would glaze over and there was nothing there"*. Additionally in some interviews the participant discussed the difficult colleague making a concerted effort to be cruel to them such as denying leave for important life events. Moreover, the difficult colleagues often spoke unkindly of others creating further concern for the participant, for example, *"She's talking about other people and swearing about them and speaking about them very harshly, and ... you don't want to be on the end of that. So then you think, I've gotta watch my back"*. The level of contempt discussed by the participants was overwhelming, for example *"Some days she wouldn't even talk to me."*

4. Discussion

The present study aimed to determine if female bullying behaviour was present in the Welfare Workforce and if the behaviour was extreme enough to be classed as *primary psychopathic*. The researchers were alarmed by the number of individuals from the Welfare Industry who had worked with women who met the criteria for primary psychopathy. Even more concerning was the fact that those that did not meet the criteria still fulfilled many of the ten elements of primary psychopathy. However regardless of the label, bullying behaviour by difficult colleagues in the workplace is a serious issue and clearly has lifelong effects on those that are targeted by bullies. This was made evident by those participants in the study who talked of wanting to end their life because of the bullying behaviour. Although this study highlighted an important issue it was also rewarding to hear participants respond with gratitude for the opportunity to share what had happened to them. Many had never had the opportunity to discuss their experience due to non-disclosure agreements made between themselves and the organization. Some Welfare Organizations chose to deal with the issue by providing monetary compensation and having the victim leave rather than deal with the difficult colleague's behaviour. Hence the Welfare Industry clearly understood the psychological damage done by psychopathic bullying behaviour.

4.1 The role of welfare organizations

Welfare organisations play an important role in society protecting the vulnerable and those in need. Nevertheless, organisations are also responsible to the employees and to ensure that they a safe and supported in the workplace. It's possible that some organisations are so focused on supporting clients they neglect the welfare of their employees. Organizations appear to care more about the skills and knowledge they would lose if the difficult colleague was dismissed. Yet the counterproductive nature of this view results in high turnover of short-term staff leading to the only long-standing employee being the difficult individual. Moreover, when the difficult employee is the one who remains constant while others depart the organization, they achieve saviour status in the eyes of management. Hence the organization remains in denial that the difficult employee was the catalyst for the high turnover in the workforce.

4.2 The influence of workplace relationships

Positive professional relationships in the workplace can foster trust, solidarity and an optimistic workplace culture. The nature of workplace relationships and alliances influence productivity and employee motivation to undertake tasks. Alternatively, negative relationships in the workplace can have a detrimental impact on employees. This study found individuals who displayed harmful behaviour and at times psychopathic behaviour were able to maintain their professional status in the Welfare Organisation through ongoing alliances with people in positions of power.

4.2.1 The Power of Professional Relationships

Positions of power within an organisation are held by those employees who hold influence over others, and they do not always need to be in a management role. An employee who can hold strong alliances with those in power find it easier to bully and manipulate others for personal gain without retribution. It is important to note that a difficult colleague who applies psychopathic behaviours to bully others will be selective about who they target. Additionally, they will also identify others who support and protect them, while championing their narrative. These relationships create a level of immunity from disciplinary action and consequences within the workplace. This study found that the alliances of the difficult colleague made it problematic for victims to take act against bullying behaviour. It was common for the person making the complaint to be seen as the problem and even at times the one with the bad behaviour. Every individual who participated in this study talked about the issue of the bully not having any consequences for their behaviour. It appears the victim frustration from the lack of action by the organisation can lead to the victim acting out in frustration of the situation they are in. Hence organisations should be mindful of unhealthy alliances which can hinder due process and disciplinary action such as the case of workplace nepotism.

4.2.2 Nepotism

Nepotism is the act of using one's position of power to employ family or friends. The Welfare Industry in Tasmania appears to unofficially apply nepotism as part of their recruitment process. Whether intentional or not, this small rural Australian state holds unique issues when it comes to employing suitable professionals in the Welfare Workforce. With a reduced group of professionals to choose from, it is common for managers to employ people they know well such as family and friends. This increases the complexity of working with difficult colleagues as strong family and friendship ties can limit the avenues to address grievances. In several case studies this was certainly the situation, with one difficult colleague being a close relative with the human resource manager. This left the participant no choice but to resign from their position after several attempts to address the issues were futile. Hence psychopathic bullying individuals found it very easy to target others in a workplace, removing those they did not like or saw as competition by simply create an unbearable organisational environment.

4.2.3 Targeting by the Difficult Colleague

Interestingly, in each discussed case there appeared to be a key triggering event which changed the behavioural approach by the difficult colleague. Like the Trojan Horse, the difficult colleague initially only displayed positive behaviour with the psychopathic traits lying dormant. The unsuspecting target was shocked when someone who was once a friend and confidant became unpleasant to work beside. Through listening to the experiences of people who worked with a psychopathic bully it was found that the difficult colleague would maintain a closeness with colleagues who held resources they wanted or needed. This included colleagues who held positions of power in the Welfare Organisation or those who held important resources the difficult colleague wanted to access. Moreover, one participant went as far as to say that they witnessed the covert behaviour of the manager who isolated them targeted them and had them do their dirty work. When they were no longer willing to do the work for the difficult colleague, they successfully bullied them until the participant resigned from the organisation.

4.2.4 Female to Female Conflict

Studies have shown that psychopathic bullies are extremely likeable and as an ally colleagues can remain safe and less likely to be bullied (Lyons, Moorman & Mercado, 2019). This study highlighted the fact that females are more likely than males to develop strong bonds in the workplace. Moreover, relationships with other colleagues in the workplace appear more important to females than to males. Males found it easier to distance themselves from difficult female behaviour whereas this was not the case when both the participant and the difficult colleague were both female. Chesler (2009) suggested that a female's high desire to be liked places them in a vulnerable position and increased likelihood of being targeted by their same gender group. Several of the participants in this study talked of how the difficult colleague was close to them and that they were close friends initially. However, when the female difficult colleague saw the participant as a threat to their status within the Welfare Workforce or no longer needed them to succeed, the difficult colleague became a very different and even cruel ally. Female to female conflict is a serious issue in the Welfare Workforce. One participant suggested that the work itself creates females who become bitter and perpetrator like due to the nature of the work. Hence the question remains; is this difficult behaviour the result of the work that they undertake or was it there all along? Further research is needed to answer this question.

4.4 Limitations

This study provided important insight in the issue of female difficult behaviour in the Welfare Workforce however several limitations were noted. The participant group was small and only included the experiences of two males in the workforce. Additional male participants may have provided further answers to the gender issues. Furthermore, the study was confined to Tasmania a small rural state, and this may have influenced the findings of this study to some degree including the issue of nepotism. Hence a broader research scope may have enhanced the results.

4.5 Future directions

Future research into female-to-female conflict in the workforce could focus on multi-industries where females are dominate with a comparison to industries where there is a balanced gender cohort. Additionally further studies could include a better understanding of the principles behind animosity between females and how this has transpired overtime. Considering if this is the result of female competitiveness and workforce participation or simply a gender issue embedded in female behaviours.

Conclusion

Workplace bullying is a problem in all industry. The assumption that individuals and in particular females who work in the welfare Industry a kind and caring and treat others with respect is naive. More needs to be done to protect employees from difficult colleagues who seek to damage an individual both personally and professionally. The long-term impact on a targeted individual group or workplace culture can remain with an individual permanently. Organisations need to be better prepared to deal with difficult behaviour and be willing to both manage this behaviour and eliminate its source through performance management process is and termination of employees who are unable to change their bad behaviour.

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Servant Leadership in a Taiwanese Non-Profit Organization: A Reflective Analysis on Empowering the Next Generation of Business Changemakers

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Abstract: *This position paper reflectively examines the practice of servant leadership strategies within a non-profit organization, the Taiwan Love and Hope International Charity. Highlighted in this research is the importance of compassionate, strategic servant leadership in creating sustainable social impact by drawing on a reflective analysis of the researcher's role, on the one hand, as Chairman of the Board of Directors of a registered charity serving children with neurodevelopmental disorders. At the same time, the researcher is also identified as the foster father to several of the children who are under the 24/7 care of the organization. Business leaders in Taiwan are called upon to use their position, power, and influence to authentically address the needs of underserved populations while aligning their corporate social responsibility (CSR) program with the United Nations Sustainable Development Goals (UNSDGs). Global social advocacies can guide leadership models in both the non-profit and for-profit sectors. By integrating servant leadership theory with the researcher's practical experiences leading a non-profit organization (NPO), this paper provides a framework for leaders seeking to enhance their organizations' impact while contributing to broader social development agendas. A critical proposition is the hope of instilling in the next generation of business changemakers a leadership culture in which corporate social responsibility is authentic and integral to meaningful profit-making, not just a stint for publicity and public relations.*
Keywords: *servant leadership, non-profit organization, business, Taiwan*

1. Introduction

Organizational leadership, whether regarding its effective execution or the lack of it, significantly impacts organizations, their members, and stakeholders (Aboramadan et al., 2022). It critically determines organizational success (Canavesi & Minelli, 2022). Differentiating between organizations that are run for profit and those operated for charitable purposes involves critical elements that are important to the study of organizational leadership in business psychology. The organizational dynamics and underlying motivations in non-profit organizations often place unique demands on leadership roles, highlighting the distinct skills and approaches required in charitable organizations (Sanderse et al., 2020).

Unlike for-profit enterprises, non-profit organizations operate in challengingly complex environments while managing varying sources and levels of expectations (Dicke & Ott, 2023; Reficco et al., 2021; Wang, 2021; Wei, 2019). Success is assessed at different levels (Fransen et al., 2020). Expectations often unpredictably vary. Non-profit organizations are expected to deliver on mission-driven objectives that address social issues, engage with various stakeholders and communities, and achieve financial stability or, even better, growth and the accumulation of assets (Doherty et al., 2014; Sanderse et al., 2020; Wei, 2019). In recent years, there has been a growing demand for socially conscious and ethical leadership, underscoring the importance of corporate leaders who embrace the philosophy and values of social responsibility (Cortes & Lee, 2021; Hsu & Bui, 2022; Pless et al., 2021; Shu & Chiang, 2020). This demand is particularly evident in the non-profit sector, where leadership decisions must be transparent and often directly and profoundly impact vulnerable communities (Günzel-Jensen et al., 2018; Ortega-Rodriguez et al., 2020). A particular leadership model that has gained prominence through the years is servant leadership (van Dierendonck & Patterson, 2019).

Servant leadership, proposed by Robert K. Greenleaf in the 1970s, has developed into a widely recognized approach that aligns with the values of many non-profit organizations (Wallace, 2007; Lee et al., 2020). Recent studies have shown that servant leadership determines employee satisfaction, organizational commitment, and social responsibility, all of which are essential for the sustainable success of organizations

(Canavesi & Minelli, 2022; Eva et al., 2019; Lee et al., 2020). There is growing interest in the practice of servant leadership as opposed to the traditional hierarchical leadership models in businesses and organizations (Lemoine et al., 2019).

Specifically, through self-reflection, this position paper examines the practice of servant leadership strategies within a non-profit organization, the Taiwan Love and Hope International Charity. It highlights the importance of compassionate, strategic servant leadership in accomplishing an organization's mission and vision. Through the reflective analysis, the paper explores how servant leadership principles are adapted to management practices. By discussing actual experiences, the paper seeks to demonstrate how servant leadership fosters organizational resilience and social impact. A critical proposition in this paper is that future business leaders must adopt a culture in which social responsibility is not seen as separate from profit-making but as an integral component of sustainable success through community-building. Non-profit organizations excel within this context, showing how leadership can effectively balance social objectives with operational sustainability. Servant leadership provides a model for how future leaders in both non-profit and for-profit sectors should navigate the challenges in today's organizational landscapes.

The first part of the paper provides a detailed discussion of servant leadership theory and its relevance to organizational development. The second part is a reflective analysis of the researcher's role as chairman of the board of directors of a charity organization serving children with neurodevelopmental disorders while also taking up the role of foster father to eight abandoned Taiwanese children. The last part of the paper puts forward the proposition of how servant leadership can empower the next generation of business leaders and changemakers. It is necessary to advocate for integrating social responsibility into leadership models that contribute to broader social and global development agendas, such as the United Nations Sustainable Development Goals (UNSDGs). Advocating for social responsibility is achievable while pursuing sustainable for-profit business success.

2. The Review of Related Literature

2.1. Servant Leadership: A Theoretical Background

Servant leadership has emerged as a prominent leadership theory in the 21st century because it focuses on practices radically different from traditional leadership and management approaches (Aboramadan et al., 2022; Bano & Zehri, 2023; Canavesi & Minelli, 2022). Originating from Robert K. Greenleaf's seminal work in the 1970s, servant leadership places the needs of others above the leader's ambitions (Greenleaf, 1977; Wallace, 2007). It fosters a sense of community (van Dierendonck & Patterson, 2019), empowers individuals (Sendjaya et al., 2019), and promotes ethical decision-making (Lemoine et al., 2019). While traditional leadership models emphasize authority and top-down directives, servant leadership, on the other hand, prioritizes serving others. Eva et al. (2019) observe how servant leadership prioritizes the growth, well-being, and autonomy of the organization's constituents. This approach has proven particularly valuable in mission-driven sectors like non-profit organizations, where societal impact rather than profit maximization is the core philosophy (Ortega-Rodríguez et al., 2020).

2.2. Definition and Origins of Servant Leadership

At its core, servant leadership is defined by its authentic commitment to serving others first, with the act of leadership itself seemingly emerging only as a byproduct of carrying out this particular focus and philosophy (Sendjaya et al., 2019). Therefore, servant leaders prioritize their stakeholders, given the collective task to successfully see through an organization's mission and vision. They are driven to do what is essentially good (Lemoine et al., 2019).

Servant leadership has its roots in philosophical and religious traditions (Wallace, 2007). From Taoism and Confucianism to early Christian teachings, ancient texts and practices from the world's major religions highlight the significance of leading by serving others. In so doing, the practice of humility, compassion, and kindness were considered necessary traits of a leader. Iconic leaders of the world's major religions were seen not just as rulers but as stewards who empowered and nurtured others (Wallace, 2007). Their approach to leadership distinguished itself from the more directive and authoritative styles. Servant leadership encourages leaders to prioritize underlying humanistic philosophies rather than just emphasizing actions that lead to economic production (Greenleaf, 1977; Lemoine et al., 2019).

2.3. Fundamental Principles and Characteristics of Servant Leadership

Several fundamental principles distinguish servant leadership from other leadership philosophies (Wallace, 2007). According to van Dierendonck and Patterson (2019), these principles include listening, empathy, healing, awareness, persuasion, stewardship, foresight, and a commitment to personal and other people's development. Leaders who take this approach strive to build strong interpersonal relationships, creating environments in which members of the organization feel appreciated and empowered to contribute to the overall mission and vision.

Servant leadership tends to emphasize serving the needs of the team and community first (Lee et al., 2020). Prioritizing personal well-being and growth helps servant leaders build a trusting atmosphere that supports long-term involvement. This strategy promotes sustainable development inside the organization since team members feel appreciated and driven to help achieve common objectives.

This kind of leadership is in contrast to transformational leadership, which is centered on motivating followers and subordinates to accomplish extraordinary results (Curado & Santos, 2022). Transformational leaders often inspire and push people to go above and beyond their own expectations. They inspire followers to reach high levels of achievement through their charisma (O'Reilly & Chatman, 2020).

Servant leadership, on the other hand, is not overly driven by results or metrics (Canavesi & Minelli, 2022). Instead, it prioritizes well-being. A culture of accountability and loyalty is promoted by looking after staff members' interests. Doing so results in a team that is deeply dedicated to preserving the purpose and vision of the organization. It believes that if people are nurtured and acknowledged, organizational success will follow naturally (Aboramadan et al., 2022; Benevene et al., 2020; Dicke & Ott, 2023; Franzen et al., 2020; Lemoine, 2019).

2.4. Relevance of Servant Leadership in Non-Profit Organizations

Servant leadership is critical yet particularly complex in non-profit organizations (NPOs) (Greenleaf, 1996). NPO leaders are often expected to advance social objectives while maximizing profits (Wei, 2019). The values and objectives of non-profit organizations align with servant leadership's emphasis on community well-being and service (Aboramadan et al., 2022). However, the daunting reality is that they should be able to operate as profitable businesses (Sanderse et al., 2020; Wei, 2019).

The study by Lee et al. (2020) and Bilal et al. (2021) showed a significant association between servant leadership and employee engagement, job satisfaction, and organizational commitment in non-profit organizations. The results revealed how servant leadership promoted non-profit organizations in developing resilient teams committed to the organization's mission and in attaining social impact goals.

Additionally, servant leadership promotes ethical decision-making, which is essential for maintaining the trust of stakeholders, such as donors, volunteers, and the communities in which they operate (Fransen et al., 2020). In this context, non-profit leaders who adhere to the principles of servant leadership are more likely to cultivate sustainable partnerships and enduring relationships that result in long-term organizational success among the partners (Lemoine et al., 2019).

2.5. Challenges and Opportunities of Servant Leadership

Although servant leadership provides considerable advantages to non-profit organizations, some challenges must be pointed out (Aboramadan et al., 2020). Fransen et al. (2020) contend that servant leadership may be perceived as somewhat utopian, especially in resource-limited contexts where leaders encounter challenging decisions that involve consistency and when the truthfulness of whether team members' feelings and welfare are indeed placed first over the organization. According to Canavesi and Minelli (2022), a non-profit organization may find that emphasizing the development and well-being of its employees may, in certain ways, be in direct opposition to the operational objectives of maintaining long-term financial stability. The risk that donors disagree on how the organization spends its money on team-building activities is a genuine issue. There is also the risk that employees leave the organization to seek better pay and opportunities in more established non-profit or for-profit organizations despite how they are currently taken care of (Dicke & Ott, 2023).

Despite this, servant leadership should still be considered significantly beneficial. Servant leadership promotes a culture that empowers teams to be better prepared to address social issues through innovative practices (Bano & Zehri, 2023). Additionally, the alignment of servant leadership with ethical and sustainable practices enables non-profit organizations to significantly contribute more to global initiatives, such as the United Nations Sustainable Development Goals (UNSDGs) (van Dierendonck & Patterson, 2019). Because of this, servant leadership makes it possible for non-profit organizations to achieve their immediate goals and makes it viable for them to make meaningful contributions to the broader social transformation advocated by the United Nations (Eva et al., 2019).

2.6. Aligning the United Nations Sustainable Development Goals (UNSDGs) with Corporate Social Responsibility (CSR): A Servant Leadership Perspective

The United Nations Sustainable Development Goals (UNSDGs) are 17 global goals aimed at addressing significant social, economic, and environmental issues confronting the world today (United Nations, 2015; United Nations, 2021). These goals are a call to action for governments, corporations, and civil society to work together in promoting social transformations that benefit everyone by 2030 (United Nations, 2015). Achieving these ambitious goals requires leadership, particularly from organizations that promote positive changes at local and international levels (UNESCO, 2019; UNESCO, 2020). A leadership model that aligns with the UNSDGs is servant leadership. In many ways, the principles of servant leadership complement and resonate with the principles and ideals of the UNSDGs. In addition, organizations implementing Corporate Social Responsibility (CSR) programs best represent efforts to operationalize support for sustainable development (Shu & Chiang, 2020; Shu et al., 2020).

2.7. The Role of Servant Leadership in Promoting the UNSDGs

Within the context of Greenleaf's (1977) conceptualization of the principles and traits that best characterize the most iconic personas behind the world's major religions, among the different leadership styles, this paper argues that servant leadership stands out as one of the most relevant with the UNSDGs. Servant leaders are particularly well-suited for advancing the UNSDGs due to their profound commitment to altruistic objectives (Eva et al., 2019).

The UNSDGs cover various issues, from health and poverty alleviation to climate action and peacebuilding (see United Nations, 2015). The sustainable development goals fundamentally establish a more just, equitable, and sustainable world. Since servant leaders are dedicated to promoting inclusive, sustainable development that prioritizes the needs of the most marginalized and vulnerable groups, their values align with this vision (Bilal et al., 2021).

The emphasis on stewardship in servant leadership is especially relevant to the UNSDGs (United Nations, 2015). In this sense, stewardship refers to the responsible management of resources and protecting future generations' well-being. This concept reflects the UNSDGs' primary goal of ensuring that development is sustainable and benefits everyone, both now and in the future. Canavesi and Minelli (2022) mention that servant leaders are naturally forward-thinking and concerned about the long-term consequences of their actions. Outlined below is how servant leadership aligns with the promotion of some of the UNSDGs (see United Nations, 2015; United Nations, 2021; UNESCO, 2019; UNESCO, 2020):

1. **Empathy and Inclusion**: The emphasis on empathy is one of the distinguishing characteristics of servant leadership. Leaders who are servants listen actively to the needs of others and seek to comprehend their point of view. This characteristic is consistent with the UNSDGs' pledge to leave no one behind, ensuring that development reaches even the most marginalized communities (United Nations, 2021). Empathy encourages an environment of inclusivity, in which solutions are created together with those most affected by global challenges (Sendjaya et al., 2019). Servant leaders develop environments that prioritize the rights and needs of those who are disadvantaged, thereby contributing to reducing inequalities (UNSDG 10) and assuring gender equality (UNSDG 5). Servant leaders advance the UNSDGs' overarching goals by cultivating inclusive communities and workplaces enhancing equitable access to resources, opportunities, and services.

2. **Ethical Decision-Making and Corporate Social Responsibility (CSR)**: Servant leadership is also intricately linked to ethical decision-making, which is essential for working towards achieving the UNSDGs. Servant leaders are committed to making decisions that benefit society and the environment, frequently at the expense of immediate financial gain or comfort (Hendratama & Huang, 2021). This ethical position is essential for promoting Corporate Social Responsibility (CSR), a practice in which businesses voluntarily incorporate environmental and social concerns into the way they operate (Shu & Chiang, 2020). Companies that servant leaders lead are more likely to adopt and promote CSR initiatives that are consistent with the UNSDGs. Servant leaders inspire

businesses to operate in a manner that contributes positively to global development, whether by reducing carbon emissions (UNSDG 13), supporting sustainable supply chains (UNSDG 12), or promoting equitable labor practices (UNSDG 8). Servant leaders motivate their organizations to surpass regulatory compliance and implement proactive initiatives to guarantee that their business practices contribute to sustainability and the welfare of all stakeholders (Reficco et al., 2021).

3. **Collaboration and Partnerships**: **Goal 17:** Partnerships for the Goals emphasizes the significance of working together to accomplish the United Nations Sustainable Development Goals (UNSDGs) (United Nations, 2015; UNESCO, 2020). It is an excellent example of developing collaborations, which are crucial for global development because servant leadership strongly emphasizes forming connections and cultivating credibility among its adherents. The ability to bring together a wide variety of stakeholders, including communities, corporations, non-profit organizations, and government agencies, to work toward shared goals is a capacity that servant leaders need to possess. Collaboration is indispensable when solving significant global issues that no particular organizational body can handle independently (Sanderse et al., 2020). Servant leaders facilitate partnerships founded on mutual trust, respect, and a shared commitment to the common good. Servant leaders contribute to creating synergies that magnify the effect of collaborative efforts toward attaining the UNSDGs (Pless et al., 2021). Synergy is accomplished by promoting the sharing of information and aligning resources.

4. **Empowerment and Capacity Building**: Another essential principle of servant leadership is empowering others. Servant leaders participate in their teams' personal and professional development, assisting individuals in developing the skills and confidence necessary to make significant contributions to their organizations and communities (Curado & Santos, 2022). This emphasis on capacity building is consistent with the UNSDGs' goals of equitable and sustainable economic growth (UNSDG 8) and excellent education (UNSDG 4) (United Nations, 2015). Through empowerment, servant leaders promote a culture where people are encouraged to take the initiative and lead efforts to address global issues. Whether by initiating community-based initiatives or managing sustainability projects within organizations, servant leaders assist individuals and organizations in increasing their capacity to contribute to attaining the UNSDGs. This emphasis on empowerment also helps to produce future leaders prepared to carry on the goal of sustainable development (Sendjaya et al., 2019).

5. **Long-term Vision and Sustainability**: Servant leaders are inherently vision-focused since they ensure that their actions now contribute to a foreseeable future (Lee et al., 2020). This long-term outlook is consistent with the UNSDGs' focus on sustainability, which aims to establish a society where social, economic, and environmental well-being are balanced for future generations. In order to ensure that their organizations function in a way that promotes sustainable development, servant leaders put long-term effects ahead of short-term benefits (Canavesi & Minelli, 2022). Servant leaders who prioritize sustainability in their decision-making contribute to advancing objectives such as UNSDG 13 on climate action, UNSDG 14 on life below water, and UNSDG 15 on life on land. Servant leaders make sure that their organizations actively contribute to a sustainable future by reducing their organizations' negative impact on the environment or by supporting laws that safeguard ecosystems.

2.8. Servant Leadership as a Catalyst for Corporate Social Responsibility

As servant leadership line up with the UNSDGs, it also drives Corporate Social Responsibility (CSR). Businesses are said to be engaging in corporate social responsibility when they acknowledge the social, environmental, and financial implications of their operations and make efforts to improve the communities in which they participate (Chiang et al., 2022; do Adro & Leitão, 2020; Hendratama & Huang, 2021). Nguyen and Chiu (2023) assert that servant leaders are inherently committed to integrity and social justice, positioning them as ideal advocates for corporate social responsibility initiatives.

In organizations run by servant leaders, corporate social responsibility extends beyond mere adherence to legal mandates or public relations initiatives. In contrast, corporate social responsibility becomes an essential component of the organizational culture, where decisions focus on community development rather than solely on the bottom line (do Adro & Fernandes, 2022). By aligning their corporate social responsibility initiatives with the UNSDGs, servant leaders motivate their organizations to address urgent global issues.

Possible CSR initiatives are renewable energy projects (SDG 7), lowering poverty (SDG 1), and encouraging sustainable communities and cities (SDG 11).

Servant leaders also promote a culture of accountability, encouraging all staff members to accept responsibility for the organization's environmental and social impact. This culture fosters trust among stakeholders, including customers and staff members, and improves the organization's reputation. CSR-focused companies have a better chance of attracting and retaining workers, especially younger employees who are driven by social impact and purpose (Nguyen & Chiu, 2023; Shu & Chiang, 2020).

III. A Reflective Analysis: The Case of the Taiwan Love and Hope International Charity

The mission of the Taiwan Love and Hope International Charity is to provide disadvantaged children and youth who are often invisible in Taiwanese society with various social services, including housing, education, mental health and psychological support, and financial aid. The charity seeks to instill hope in their life via acts of love (Tiangco, 2021a). In 2013, when its founders were in Gaziantep, Turkey, the organization began as a family ministry for Syrian refugees. It was legally registered in Kaohsiung, Taiwan, in 2016. During the peak of Taiwan's COVID pandemic in 2021, the charity established a home for abandoned Taiwanese children with severe neurodevelopmental disorders who would otherwise be institutionalized in a nursing home or long-term medical care facility (Tiangco, 2021b; Tiangco, 2021c). It now provides mental health and psychological support for Taiwanese children with special needs from low-income households. More than 50 children, youth, and families regularly benefit from Taiwan Love and Hope International Charity.

Servant leadership has profoundly impacted the Taiwan Love and Hope International Charity's interpersonal and operational dynamics, promoting a solid foundation for a caring, community-focused caregiving environment (Tiangco, 2021a). According to Greenleaf's servant leadership paradigm, leaders are most successful when they put their followers' empowerment and welfare first (Greenleaf, 1996). This reflection uses the servant leadership theoretical framework and philosophy to examine the organization's goal. It examines the specific circumstances and decisions related to these occurrences that influence leadership and organizational behaviors.

Listening is at the heart of servant leadership, and it is essential for building an open, inclusive atmosphere in which everyone feels valued (Bilal et al., 2021; Canavesi & Minelli, 2022; Lemoine et al., 2019; Eva et al., 2019; Lee et al., 2020; van Dierendonck & Patterson, 2019). Taiwan Love and Hope International Charity has built a strong listening culture to address the staff’s interpersonal problems and the team's emotional needs. *“A culture of listening is very important in the organization,”* as described, with structured listening interventions involving a social work-trained supervisor and subsidized counseling services to resolve conflicts and support staff. Particularly in high-stress caregiving situations, listening reflects Lemoine et al.’s (2019) view that creating trust and cohesiveness inside an organization depends on empathy and listening. This emphasis on active listening guarantees that caregivers' emotional well-being is prioritized, enabling them to give the children consistent, attentive assistance.

Empathy is another pillar of servant leadership that has been pivotal in responding to the needs of both staff and children, especially during challenging moments. *“There is no job or task that is beneath me,”* the researcher reflects, underscoring a commitment to easing the physical and emotional load of staff by participating in demanding caregiving and administrative tasks. This hands-on support model aligns with studies indicating that leaders who demonstrate empathy cultivate a supportive, motivated work environment (Eva et al., 2019; Sendjaya et al., 2019). The researcher fosters an environment where staff feel valued and understood by personally engaging in caregiving and sharing administrative responsibilities without micromanaging. This has led to a resilient, dedicated team that continually overcomes the complexities of providing 24/7 care to children with neurodevelopmental disorders while at the same time managing the organization’s administrative operations that involve constant coordination with Taiwan’s Social Affairs Bureau, the management of donors, and sending out acknowledgment receipts for their tax reporting needs.

In particularly complex situations, the demand for emphatic listening and understanding is much higher. There was a particular instance when a caregiver felt uncomfortable due to a child’s affectionate behavior that involved unwanted physical touching. The team’s practice of self-awareness allowed for a compassionate, nuanced response from everyone. Rather than dismissing the caregiver’s discomfort as trivial, *the researcher validated her feelings and utilized counseling and supervision as interventions,* aligning with Sendjaya et al.'s (2019) emphasis on awareness to understand organizational dynamics and respond with emotional intelligence. By addressing the issue with sensitivity and respect, the researcher ensured that both the caregiver’s emotional needs and the child’s developmental needs were met, reinforcing a compassionate and supportive workplace culture.

The charity's dedication to recovery is demonstrated through the implementation of John Bowlby's Attachment Theory, which involves the researcher acting as a foster father figure for the children. The deeply personal approach that seeks to provide emotional healing to children who have encountered abandonment and abuse is reflected in the statement, "*I treat and care for them like my own children, playing with them, going to the mall, and doing different activities with them*." This approach aligns with the therapeutic relationship framework in attachment theory, emphasizing that stable attachments can promote resilience and emotional stability in children who have experienced trauma (Bowlby, 1988). The positive improvements in the children show the transformational influence of a family setting, which not only affects the children's healing journey but also motivates team members to embrace comparably compassionate and committed caring practices.

Foresight has also played a critical role in shaping the charity's mission, particularly during its transition from serving Syrian refugees in Turkey to supporting abandoned children in Taiwan. Recognizing the sustainability challenges of operating long-distance projects in Turkey in 2016, the researcher, around the same year, embraced *the opportunity to provide caregiving to a child with severe disabilities,* which led to the charity's current focus on neurodevelopmental care. This foresight illustrates Greenleaf's (1977) concept of stewardship, in which leaders serve as guardians of the organization's mission, ensuring that it adapts to the needs of the people it serves. The researcher established a sustainable and responsive organization that adapts to changing circumstances.

The commitment to community development enriches the charity's objective, exemplifying Franzen et al.'s (2020) quality of encouraging community involvement within servant leadership. The organization participates actively in the projects of partner organizations and continually supports community-driven initiatives. *"We are there whenever they need us,"* exemplifies the extent of this commitment, as demonstrated by a recent journey through dangerous typhoon conditions to support a partner's event in another city, which was relatively not as severely affected as the city where the charity organization is located. In addition to strengthening ties with other organizations that share its ideals, this commitment to partnership—even in the face of adversity—underlines the charity's standing as a loyal partner of the community to which it belongs.

In addition, the commitment to the growth and development of team members is another critical aspect of servant leadership inside the organization. The researcher, CEO, and supervisor actively support the caregivers in their professional development through structured mentoring, training programs, and regular team-building gatherings. These interventions are done in recognition that a committed team is crucial to the organization's success. *"We constantly check-in with everyone, even if it is not related to work,"* highlights a holistic approach to staff development, consistent with Bilal et al. (2021) and van Dierendonck and Patterson's (2019) findings that servant leaders foster high-performing teams by nurturing personal and professional growth. Investing in the growth of team members helps the Taiwan Love and Hope International Charity establish a work environment and culture in which caregivers feel engaged and supported to perform their jobs.

Finally, stewardship is most evident in the researcher's commitment to integrating the charity's mission into his family life. *"If given the opportunity to do so, I am committed to continue my role as their father figure until my last breath,"* signifies a deep sense of responsibility and dedication to the children's well-being. This long-term vision is not limited to a personal commitment but also encompasses preparing future generations. The researcher involves his own biological children in caregiving practices in the hopes that they will carry on the charity's family-centered philosophy. This commitment to sustainability is indicative of Greenleaf's (1977) concept of stewardship, in which servant leaders ensure that the organization's mission is preserved for future generations, thereby ensuring that its positive impact endures.

The leadership of the Taiwan Love and Hope International Charity exemplifies servant leadership concepts, as highlighted in the reflection of many of its practices. The organization has cultivated a resilient, supportive community committed to long-term transformation by emphasizing organizational values and a culture inherent in servant leadership. The examples provided demonstrate the practice of servant leadership, especially in a non-profit setting where caring for society's most vulnerable members demands a lot from others.

IV. Conclusion

A paradigm shift from traditional hierarchical models to one that is collaborative and purpose-driven is exemplified by servant leadership, particularly within a non-profit organization (Dicke & Ott, 2023; Ortega-Rodriguez et al., 2020). The Taiwan Love and Hope International Charity is an organization where the accomplishment of mundane administrative and organizational functions does not determine leadership. Its mission genuinely aims to serve, uplift, and transform lives (Tiangco, 2021a). Servant leaders cultivate a culture that supports the organization's mission while at the same time addressing society's broader challenges by cultivating environments where each individual is valued through listening, empathy, and stewardship. This dedication to community development proves that genuine leadership is rooted in the capacity to inspire others, motivating them to contribute their finest selves to a common goal. Although the experiences discussed are based within the context of a Taiwanese non-profit organization, future research can further look into servant leadership in Taiwan across industries and cross-cultural differences and nuances. When compassion and strategic vision are combined, leaders who take this approach demonstrate that it is possible to achieve a sustainable impact and not just make a profit.

The best leaders are those who understand that their power comes not from authority but from collaboration. Their compassion for others is a catalyst for sustainable innovation. Leadership is not just about managing people—it is more about mobilizing passion and compassion wherever and whenever needed. Compassion and empathy are force multipliers that allow purpose-driven leaders the ability not just to build organizations but communities that sustain the business. Therefore, the next generation of business changemakers must cultivate a culture of authenticity in their servant leadership. Achieving social responsibility is achievable while pursuing sustainable for-profit business success.

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Modern Strategies For Participating In The Virtual Economy

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Abstract: *The purpose of the study is to find out the most effective strategies for increasing participation in the VE (virtual economy). Interpretivism research philosophy is used to get exact information related to this topic. Deductive approach follows for developing the concept of present research work with appropriate theories. Exploratory research design is used for exploring different dimensions of this research. Secondary data collection is used to collect data based on research topics that can help in getting more relevant data from authentic articles. Thematic data analysis method used to analyse data that was collected for getting desired results. These methods support the analysis of the topic and also help in providing relevant information related to the study. The finding suggests that modern strategies support development of the virtual economy. Data shows it increases involvement of people in the virtual economy and also increases investment. People are storing their digital assets on metaverse platform. Nonetheless, there are both financial and cyber security risks involved in metaverse. There is a need for policy intervention to make metaverse safe for users. Analysing the existing literary sources related to the study topic, this study provides the knowledge related to the advantages and disadvantages of the digital economy. The impact of modern technologies upon the digital economy significantly enforces the relationship of the technology-based tools with operational process of organisations.*
Keywords: *Crypto, Metaverse, Virtual economy, Blockchain, NFTs*

1. Introduction

1.1 Background

Digital economy is a significant force which changes the business pattern and also creates an impact on revolutionising the business as per the complex market. The digital economy is an emerging concept in the modern era, as people prefer to use quick and easy ways in the payment process. In the global trading and investment process virtual economy plays an important role. In high quality economic development digitization takes a significant role as it increases the chance of expansion of the businesses in the competitive market (Ding *et al.* 2021). Performance efficiency and productivity of businesses helps to grow the businesses and the economic condition as well.
The development of the circular economy increases the need for VE (virtual economy) in the business who has tried to expand the business in the international market. Metaverse, Crypto and Blockchain are the advanced technologies that can be used for creating a strong business strategy for organisations (Mancuso, Petruzzelli & Panniello, 2023). Mechanisms of technological innovation need to be understood by industries to implement advanced technology in the implementing virtual economy. The development of the technology increases the efficiency of the business and also grows the opportunity to expand the business in the international market.

1.2 Rationale

In the global digital economy technology takes a huge part in making the trading process easy for different companies. Virtual economy can be able to increase entrepreneurial activity and assist in developing the economy of a particular country. Industrial structure is also modified by integrating virtual economy which can be helpful for maintaining the organisational goal of the peculiar industry (Su, Su & Wang, 2021). Advanced technologies increase the efficiency of understanding the trend of the market related to the economy of organisations. For example, the finance sector needs the concept of virtual economy for providing satisfaction to customers. In developing sustainable business in the banking sector, the virtual economy is quite important. It can help to increase the effectiveness of business strategies and develop the ability to make right decisions.
In the present era, organisations need to develop the knowledge about technologies along with the way that can be helpful for implementing such strategies in an organisation. The global economy has changed during the past few years which create a significant impact on the growth of the businesses. Each and every sector faced the impact of the changes in different ways, thus it is important to describe the importance of the technology. Technological development increases the use of virtual economy within businesses which can increase the efficiency of organisations. Technology used in the economy has changed immensely after the development of the technology in recent years (Raihan, 2024). The revolution can be achieved through the effective implementation of technology in achieving the increased participation in the virtual economy.

Above data shows the percentage of increasing users during the past few years and it helps in analysing current trends of the market. This data can be useful for understanding future trends related to investment in crypto assets. Companies such as Tesla show interest in cryptocurrencies. MasterCard initiated a "crypto credential", enables the holders of cryptocurrency in transacting the complexities of the block chain addresses (Paymentsdive, 2024). Data related to the evolution of cryptocurrency suggests that investment in Virtual platforms have increased by the years of June 2024. 190 percent global users have been increased towards the adoption of cryptocurrencies that give the idea about increasing future investment in cryptocurrencies.

1.3 Research aim and objectives

Aim

The aim of the study is to understand the effective modern strategies that increase the participation of businesses in the virtual economy.

Objectives

- To discuss the fundamentals of digital tools such as blockchain, crypto and metaverse which are the part of modern strategies for increasing participation of people into virtual economy
- To evaluate the role of digital technologies such as Metaverse, Crypto, Blockchain and NFT Sub in enhancing the growth of digital economy
- To investigate the risks and challenges involved in using digital technologies such as metaverse, blockchain and crypto to manage digital assets
- To identify solutions to manage the issues and challenges associated with the use of digital technologies to take part in digital economy

1.4 Research questions

Research questions have been discussed in the section below,

- What are the fundamentals of digital tools such as blockchain, crypto and metaverse?
- What is the role of digital technologies such as Metaverse, Crypto, Blockchain and NFT Sub in enhancing the growth of digital economy?
- What are the risks and challenges involved in using digital technologies such as metaverse, blockchain and crypto to manage digital assets?
- What are the solutions to manage the issues and challenges associated with the use of digital technologies to take part in digital economy?

1.5 Significance of the study

The study is important for providing the information about the modern strategies for digital marketing. In the present study the role of digital technology has been discussed in a detailed manner. Other than that, effectiveness of strategies in increasing participation of business in the vertical economy has also been highlighted in this study. The research has involved the data related to the existing technologies in maintaining economic development in the businesses. The study can be able to provide suggestions related to the challenges faced by businesses in implementing modern technology. Literature also has been included for providing more information about the topic. In this present era, it is necessary to gain knowledge about technology to strengthen economic growth and the research provides such information.

2. Literature review

2.1 Importance of modern strategies for increasing participation in virtual economy

In increasing global reach strategies related to the virtual economy are quite important. It increases the reach of the business towards the global customer which helps in expanding businesses. The revenue stream has also been increased with the application of modern strategies as it diversified the revenue generation platforms. According to Akter *et al.* (2020), digital services and online market places are quite helpful for increasing revenue streams for organisations. Automation technology enhances efficiency with a direct impact on the productivity of businesses. Flexibility and scalability have been enhanced with the integration of modern technologies in supporting the goal related to the virtual economy.
The transaction cost can be reduced through using the digital economy for international transactions. Different customers prefer different ways to make transactions and it gives the personal experience to people. It can be one of the reasons that the virtual economy contributes to growing businesses in the international market. As mentioned by Knudsen *et al.* (2021), competitive advantage is also the benefits of incorporating virtual economy in industries. Advanced technology provides sustainability of the businesses and supports the strategies related to cost reduction from international transactions. Different articles provide ideas about the development of the virtual market in the finance sector.

2.2 Usage of metaverse, blockchain, Crypto and NEFT Sub in virtual economy

Blockchain have been helpful for creating secure marketplaces for selling and buying products along with virtual assets. In the financial sector the technology is extremely important for increasing the interest of the people in the virtual sector. Increasing involvement of people in this technology such as Crypto, Blockchain, Metaverse and others is also helpful for increasing the economy in the virtual economy. In recent years, virtual platforms have increased throughout the world and it enforces such businesses to grow the incorporation of advanced technology. In the viewpoint of Allam *et al.* (2022), meteverse is the concept that has been created in recent years after analysing the growth of the economy in the virtual platforms. Businesses are interested to invest in the virtual platforms and the incorporation of Blockchain technology can support the business strategies.The participation of people towards the virtual world has been enhanced in these years as it helps in generating profit to people.
Digital technologies support the investment of Crypto and NEFT sub which can be beneficial for businesses as it has enhanced the value of collected crypto currencies in businesses. In the perspective of Sitthipon *et al.* (2023), creating virtual coins and making it as a better investment idea is the main concept of the Crypto currency. Investment in technologies can be able to increase the value of currencies which support the growth of such an economy. Personalised experiences of customers can help to increase the investment in the metaverse and Crypto currencies. Block chain helps to maintain the transparency in the investment and reduce the fraudulent activities from the virtual platforms. Managing investment of businesses can be easier for the businesses after implementing modern technologies. Strategic steps of such businesses increase the investment opportunity and also provide chances to more companies to invest in the businesses. Technological incorporation ensures security related to the investment and also attracts people towards the virtual platforms. It gives a chance for developing the business idea based on the digital platforms and provides best returns to people.

2.3 The challenges related to implementation of modern strategies in the virtual economy

Lack of knowledge about technology, limited technological incorporation in businesses and security related issues are the main challenges faced in the virtual economy. Increasing concepts of the virtual economy enhance unethical activities along with fraudulent involvement. Such issues can create a huge problem in developing such concepts and also minimise the chance of involvement of people in the virtual economy. As mentioned by Uzougbo, Ikegwu & Adewusi (2024), the rise of cryptocurrencies in the financial landscape can increase the problem of transparent transactions. Judicial challenges are quite significant in creating challenges for such businesses. Enforcement of law needs strict regulation for getting better outcomes in the virtual economy. Decentralised nature of crypto currencies can increase the challenges related to the unethical practices. In the present situation people like to be involved in investing in cryptocurrencies and other virtual economies. In international trading cryptocurrencies can expand the issue related to cyber security.

Rise and fall of cryptocurrencies create barriers in developing the virtual economy as it has a direct investment in the metaverse. Values of cryptocurrencies can analyse through the Blockchain technology and it also helps in describing the barriers that can create for the fluctuation value of cryptocurrencies. In the perspective of Radanliev (2024), outdated concepts related to technology, enhance issues of distinguishing cryptocurrency as a mode of virtual economy. It can observe that there are different types of fraudulent activity based on the cryptocurrencies. It is a big issue that creates an influence on the development of the virtual economy in the modern era. Technological implementation supports effective strategy for minimising challenges of businesses. Digital assets need to give significant returns to investors and it can be the way to sustain the development of the virtual economy in this digital era. Different types of cryptocurrencies are present in markets and it is important to understand the reliability of currencies.

2.4 Future scope for implementing modern strategies in the virtual economy

Business related to cryptocurrencies and the businesses promoting virtual platforms can get immense profit from businesses. Blockchain technology and cryptocurrencies are two different words, however; the function of the technology is quite similar in increasing growth of virtual economy (VE). In the viewpoint of Morton (2020), cryptocurrencies have a huge future scope as it gives the chance to ensure peer-to-peer payment options. It helps to securely send and receive payment through the use of electronic payment. Taking control in the monetary unit and controlling the flow of cryptocurrency helps in developing the business. Cryptocurrencies create scope in increasing the business in the complex situation and grow the value of such currencies.

Incorporation of Blockchain increases the investment in this business and also helps in the growth of VE. Increasing investment in VE expands the future scope of the business and takes initiatives in development of business. In the perspective of Shi, Yao & Luo (2023), investment in Blockchain technology ensures the growth rate in these businesses in recent years. Operation of platforms like metaverse and blockchain increases interests of people towards business. The current trend of market and growth rate of technologies expands the future scope of VE. The value of cryptocurrency has a high chance to increase in a significant manner in the near future.

2.5 Theoretical underpinning

Digital transformation theory

This theory explains the needs of digital transformation with time and also depicts the importance of digital incorporation in different sectors. As mentioned by Weritz et al. (2024), societies and business confronted with the new opportunities and challenges of digital application, used within the daily use. In managing the risk related to cyber security technological support is extremely important. Identifying effective strategies for technological implementation in the virtual economy can be understood through aligning this theory with the present topic. Digital transformation theory can guide business related metaverse and other virtual platforms in a correct way. Designing modern strategies and implementing strategies need support of this theory to develop such a business.

3. Methodology

"Interpretivism Research philosophy" is used in the present research as the method is appropriate for the research to give objective-based knowledge. Interpretivism considers various differences including circumstances and cultures leading to the realities of society (Alharahsheh & Pius, 2020). Research approach is another important part of research and ***"deductive research approach"*** is used in research that increases knowledge about this topic. This approach includes theory and is associated with can relate the topic with its practical implication. "Exploratory research design" helps in exploring different dimensions about the topic and also gives support the context of the study. Research methodology is the procedure of using the specific techniques in identifying and analysing the collected information related to the topic of the study. Secondary qualitative data collection method is used within this study to evaluate the topic of this study with thematic analysis. Research methodologies need a proper strategy and planning to get the best outcome from the findings of this research. Depending on the research methodology, data collection method and data analysis method are important. Ways of data collection method is dependent on the strategies taken for the research.
"Secondary data collection method" is followed for this present study as it supports objectives. Secondary data involves different resources such as articles, journals, official websites and many more. Data collection is an important process for setting the context of this study and getting the desired outcome from this research. Secondary data collection gives the flexibility to take data from different resources that are related to this present research work (Taherdoost, 2021). ***"Thematic data analysis process"*** is used for analysing data in this study and balancing the concept of the research. Creating themes based on topic is important for analysing data related to this research. All the articles used within this study are accessed from the open-accessed articles presented in Goggle Scholar and the researcher provides full credit to the writers for their contribution within those articles. Thus, the ethical consideration is well maintained within this study. ***Ethical consideration*** is an important part that helps in managing ethics throughout the study. In the research the data is collected while maintaining general guidelines and rules.

4. Results and discussion

4.1 Theme 1: Impact of Digital Technologies in digital economy economy

The chosen article has explored the role of digital technologies in facilitating the upgradation of people into the digital economy. It has been discussed how the emergence of digital technologies such as blockchain, cloud computing and artificial intelligence has played a critical role in creating more opportunities for people to take part in the virtual or digital economy. There has been use of secondary data on the use of digital technologies in this chosen article. In recent times, there is a rapid surge in digital technologies, making it convenient for people to be associated with the digital economy. It has been discussed in the chosen article that it has become easy to trace financial transactions with the use of blockchain technology (Sturgeon, 2021). There is also automation of systems and business processes with the use of modern technologies. In every sector whether retail and healthcare, digital technologies are being integrated to promote the notion of digital economy.
However, the article has portrayed the issue of digital divide as many people are yet to be associated with digital technologies. There are people who lack access to high-speed internet services and digital technologies. Hence, everyone cannot obtain all the benefits by being a part of the digital economy. Apart from the issue of digital divide, there has been mention of cybersecurity risks affecting the people using digital technologies to benefit from the virtual economy (Fiaz et al. 2024). The risks of cyberattacks are also amplifying as the globe is being more interconnected, facilitated by digital technologies. Businesses may face significant loss as they face cyberattacks. In addition to this, people also feel discouraged as they come across the risks of cyberattacks.
Digital economy is improving the global value chain despite the issues and challenges. A surge in computer networking and mobile devices has opened new windows of opportunities for individuals and business institutions. People can interact with businesses virtually using their mobile devices. This is also benefiting brands as they can promote their goods and services to customers. It is new normal to use digital devices to make payments virtually. Development in Information and Communication Technology (ICT) also supports the participation of people in the digital economy (Radanliev et al. 2024). As part of ICT infrastructure, availability of 5G network services has made it easy to have access to the digital world.

4.2 Theme 2: Cyptocurrency contributing in financial inclusion in Digital economy economy

In this chosen article, there is focus on evaluating the role of cryptocurrencies in promoting financial inclusion in the digital economy. Crypto is considered to be a virtual currency that works on the digital ledger technology (Shin & Rice, 2022). This currency was introduced back in 2010 and since then it has witnessed a tremendous growth in terms of users and revenue. It is also forecasted that crypto technology will bring massive transformations in the way online applications are used. The impact of crypto technology is demonstrated on various aspects such as economy, financial inclusion and innovation. Qualitative method has been implemented to carry out interviews with the chosen respondents.

The findings have shown that the introduction of crypto currency has paved the way for people in developing states, becoming a part of the financial system. This may lead to people holding crypto as a form of digital asset. In short, it has been suggested in this article that crypto can create an alternative financial system. As per this article, crypto is facilitating economic growth. Nonetheless, crypto currency comes with a couple of risks and issues which can be difficult to ignore. The process of cryptocurrency mining is an energy-intensive process, having a negative impact on the environment.

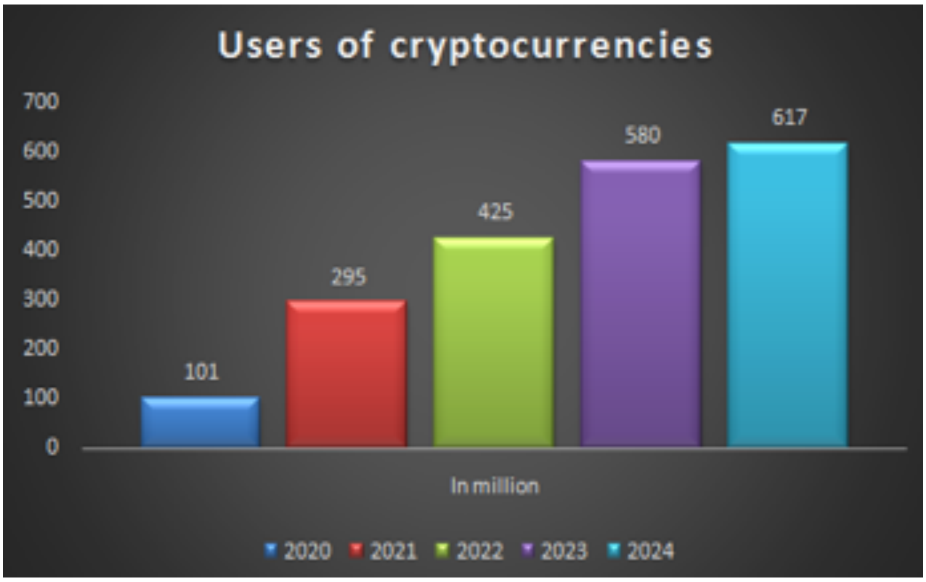

Figure 3. Consistent surge in users of cryptocurrencies
(Source: Self-created using data collected from Best, 2024)

There is a constant surge in the number of users of crypto*c*urrencies globally. In 2020, there were around 101 million users of cryptocurrencies. In 2024, the number of users of cryptocurrencies has reached 617 million Best (2024). This is an indication of the growing popularity of crypto users. A rise in crypto users has resulted in driving the revenue in this particular domain.

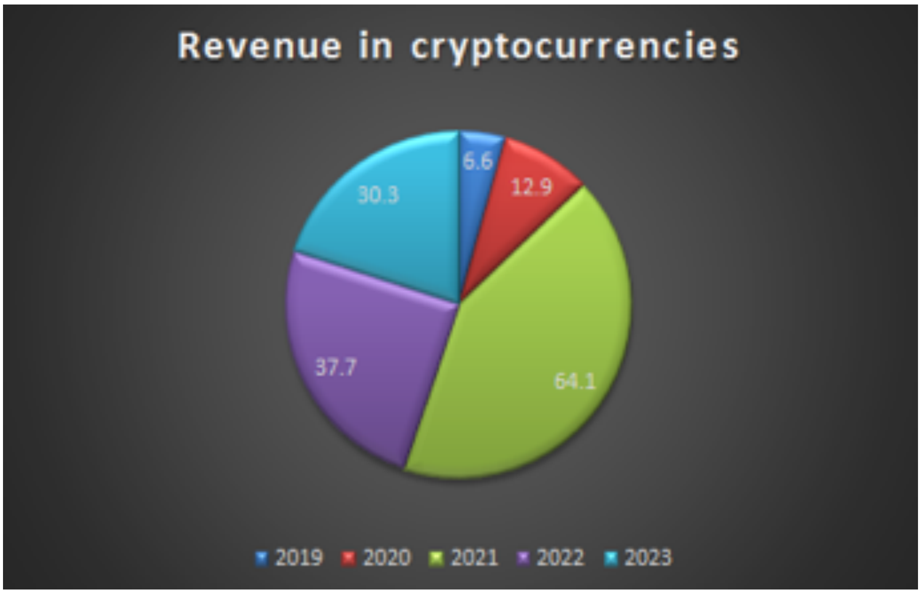

Figure 4. Growth of revenue in the domain of cryptocurrencies
(Source: Self-created using data collected from Statista. 2024)

In 2019, revenue in cryptocurrencies was around US$ 6.6 Billion. The revenue in 2023 was over US$ 64 Billion. People are accepting cryptocurrencies as an alternative currency. A constant rise of cryptocurrency is driving innovation in the global financial system. There is more potential for more effective use of blockchain technology in facilitating the use of crypto and similar types of digital currencies. However, it has been mentioned in the chosen article that a financial system backed by crypto is unregulated. On top of this, there are many vulnerabilities such as hacking and manipulation of the market involved with the use of crypto.

4.3 Theme 3: Blockchain has its role in the metaverse to promote participation in digital economy

Blockchain technology is an important element of the metaverse in promoting the phenomena of the digital economy. In an article, it has been reflected that there happens an interaction between blockchain technology and metaverse to support people with their digital asset management efforts (Truong Le & Niyato, 2023). A detailed examination of the opportunities and challenges as blockchain is integrated with metaverse in this article. A comprehensive survey has been performed in this chosen article to derive all the relevant findings. The integration of blockchain technology with metaverse facilitates virtual reality (VR) and Augmented reality (AR) while enabling trust and security in the process.

The incorporation of blockchain technology in metaverse works as an immutable ledger of transaction, making it possible to track the genuine identity of owners of digital assets. People can develop more trust and confidence in using digital currencies because of such security measures by creating new block chains with the distribution ledger (Mourtzis, Angelopoulos & Panopoulos, 2023). There can be higher levels of transparency in the financial system operated virtually since blockchain technology is used. There are multiple digital assets for use on metaverse. These digital assets include in-game assets, virtual real estate and non-fungible tokens (NFTs). The management of these digital assets become easy as blockchain technology is integrated into the metaverse.

Blockchain technology plays a critical role protecting the digital assets of people. The tracking of ownership of digital assets is easy, attracting more people to be a part of the digital economy. People can exchange their digital assets on metaverse in a secured way as blockchain technology works in the background to provide safety and security to users (Yuan & Yang, 2020). Blockchain technology allows development of decentralised applications that run in the background in an autonomous manner without requiring any central authority.

The integration of blockchain into the metaverse comes with a few issues and challenges. First of all, there are regulatory uncertainties attached with this digital financial system. Governments in all parts of the world are not confident with the growing use of metaverse and crypto currency. There may be sudden regulatory changes affecting the users of such a financial system. The cost of transaction is high as users use metaverse backed by blockchain technology to manage all their digital assets (Wang et al. 2022). There is privacy concerns associated with the use of metaverse by people. Personal information of users may be stolen and misused. There may be a need for policy measures to deal with such challenges to encourage more people to be a part of the digital economy.

4.4 Theme 4: Digital platforms initiatives facilitate growth of digital economy

The global economy has evolved drastically over the last few decades. The integration of digital technologies has facilitated the evolution of the global economy, transforming it into the virtual form. In this chosen article, the evolution of the global economy and the contribution of digital technologies in transforming the same is discussed (Acs *et al.* 2021). There has been use of secondary data in this article. It has been explored that the emergence of the internet services back in the 1970s opened new avenues of growth in the global economy. This helped in materialising the concept of digital economy. There has been a rise of social media sites and large tech brands such as Google and Amazon.

Technological advancements have worked as a driver of growth for the digital economy. The inception of mobile technology and data analytics has made it easy to bring down the cost of scaling of digital platforms. People are attracted to various digital platforms such as Amazon. Buying through virtual channels has become a reality for people. The role of globalisation cannot be ignored since online platforms including websites have become accessible globally (Effing, 2024). People from any part of the globe can access the information from a website. They can make their desired purchases from websites.

The economic impact of the digital economy also needs to be covered. Buyers and sellers have become able to connect on virtual platforms, making contributions to the digital economy. New job opportunities have been created due to the rise of the digital economy (Li et al. 2020). Small businesses are able to sell their goods online, making their contributions count in the global economy. However, it has been pointed out that market concentration, dependency on large platforms and regulatory issues are involved as the digital economy is promoted. Small businesses may become much dependent on large online platforms for their survival. Also, large tech brands can develop monopoly in the market. Furthermore, data privacy is also an issue related to growing use of digital technologies.

4.5 Theme 5: Financial and cybersecurity risks are restricting the rise of metaverse

There are impediments to the rise of metaverse. In a chosen article, it has been explained that cybersecurity risks and financial risks are involved with blockchain, crypto currencies and metaverse (Radanliev, 2024). System “outages and the disruptions” related to metaverse are the main components of the threads for enhancing the financial and cyber security. Mostly the inconveniences within the consumers are the financial losses in the transaction process. Apart from that, the outages caused by the “malicious actors” with the intention to “destabilise and disrupt” the platform by highlighting the importance of the users. Most of the users experience mental issues and the real-world challenges related to the cybersecurity and financial risks prevent the improvement of the rise of metaverse. A qualitative method has been applied in this chosen article to collect and analyse data. The findings have uncovered that market instability is a key risk associated with metaverse. Speculations and market volatility can affect the digital assets managed on metaverse by people. These types of risks are exacerbated with a lack of regulations. Manipulation of the market can lead to users registering financial loss.

A lack of regulations in the metaverse allure scammers to make money through Ponzi schemes. Users with malicious intent often try to exploit the vulnerabilities of such digital platforms for their gains. This can lead to innocent users losing their digital assets. Apart from these, there is a threat of cyberattacks on such digital platforms containing digital assets in various forms (Qamar, Anwar & Afzal, 2023). A decentralised system backed by blockchain technology makes it vulnerable to cyberattacks. They may carry out cyberattacks to steal sensitive information of users.

Identity theft is also an issue on metaverse as hackers can opt for the same. There can be data breaches leading to financial loss to users. The challages associated with identity cannot be denied that there is exchange of sensitive information on metaverse (Jaber, 2022). Users often indulge in exchange of their digital assets. Hence, hackers may take steps to steal such sensitive information to make their own gains. In case of incidents such as data breaches and identity theft, users may not have to ask for remedies due to lack of regulations and laws protecting the interest of users. This encourages hackers to target victims on such digital platforms.

It has been discussed in this article that there should be emphasis on innovation to promote security features of blockchain systems. There is also a need for regulatory interventions to improve the metaverse considered to be an important part of the digital economy. Collaboration between policymakers and stakeholders of metaverse can help in drafting policies to safeguard the users (Zeng et al. 2020). It cannot be ignored that metaverse is facing some challenges in the form of security risks. Yet, this can promote the participation of the general population into the virtual economy.

5. Conclusions

This research article concludes that digital technologies such as metaverse, blockchain and crypto have played a crucial role in enhancing the participation of people into the digital economy. There is an integration of digital technologies such as blockchain and metaverse which facilitated online transaction and management of digital assets. It has been found that people can manage their digital assets such as cryptocurrency and NFTs on metaverse which is a tool of digital economy. The integration of various types of digital technologies including the block chain fosters the adoption of sustainability within the digital economy system by introducing transparency and accountability.

This present study is based on providing ideas about VE and also factors affecting participation in VE. Trend of the global market and scope of increasing VE in future discussed in this research. Metaverse, Cryptocurrencies and Blockchain create a significant impact on the development of VE. It is important to understand the significance of the digital incorporation that increases the business opportunities in virtual platforms. Role of modern strategies need to be analysed as it provides support to growth of businesses. The decentralisation of the "crypto currency market" enhances the arbitrage opportunities within the digital economy of this modern time.

The growth in use of metaverse platforms by people has strengthened the inclusion of people into the financial system. People who are not part of the banking system feel encouraged to be associated with metaverse. Crypto currencies are working as motivators for common people to show their interest in digital economy. It is considered to be an alternate currency by people. They can exchange their digital assets on metaverse. It has been discovered that there has been a tremendous growth in the users of crypto currencies in recent years. As a result of this, revenue in the domain of cryptocurrency has also increased drastically. The concept of digital economy is not limited to crypto currencies, metaverse and blockchain, it is far more than that. \

A surge in the use of social media and other digital platforms has also played their role in strengthening the participation of common man in the digital economy. People are now able to shop using online platforms. Brands offer people the opportunities to check their goods and services on their websites. Consequently, such participation from people has contributed to economic growth. However, it also needs to be added that there are a couple of risks associated with the use of metaverse used as a tool of digital economy. Technological adaptation within the economy of this present time influences various challenges realted to the using of digital economny. Among them, the security issues are common to the users for the lacking of proper knowledge associated with the digital economy.

This study synthesises the impact of Metaverse within the development of the digital economy. The influencing trend of Metaverse within the dynamic process of economic development is the most significant aspect. Awareness related to the "comprehensive vision" of this process is mandatory for accepting those within the modern technological platform. On the other hand, because of the decentralised nature of this technology, hackers try to exploit the vulnerabilities of the same. Apart from security issues, there can be speculations and manipulation of the market leading to financial loss for users. It can be possible to steal the identity of a user from metaverse. Sensitive information of users is available on such virtual portals as users indulge in exchanging their financial assets. Therefore, users' sensitive information may often be compromised as they use metaverse.

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Enhancing Strategic Decision-Making in Saudi Arabian Universities through Business Intelligence Systems: The Role of Top Management Support

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Abstract: *This study investigates the utilization of Business Intelligence (BI) systems in Saudi Arabia universities to enhance strategic decision-making. Given the increasing competitiveness and complexity in higher education, making informed decisions is crucial. However, the adoption of BI in Saudi universities has not been extensively studied. This research seeks to address this gap by assessing the current BI implementation and suggesting a model to improve decision-making in these academic institutions. Through a literature review, ten critical factors were identified for developing a Business Intelligence (BI) model in Saudi Arabia universities. "Top Management Support" (TMS) was confirmed as essential in the "Top Professional Employees Survey." This factor plays a crucial role in the successful implementation of new technologies and initiatives by providing resources, guidance, and strategic direction aligned with organizational goals. This study surveyed 381 experts in Saudi Arabia, including faculty members in administrative positions (vice presidents, deans, vice deans, department heads, and unit coordinators). A total of 300 completed questionnaires were analysed, representing an 82.4% response rate. The study identified three sub-factors for the "top management support factor": resource efficiency, business intelligence readiness, and business intelligence training. The findings align with Saudi Arabia's Vision 2030 by supporting strategic decision-making to aid its implementation. As a result of the study, it has been highlighted that TMS is key to the successful adoption and development of more effective BI systems in Saudi universities. In addition to assisting universities in their strategic decision-making challenges, this support contributes to the long-term success of the institution.*
Keywords: *Business Intelligence Systems, Strategic Decision-Making, Top Management Support, Saudi Arabian Universities, Higher Education, Vision 2030*

Introduction

The Kingdom of Saudi Arabia has long placed a strong emphasis on education, and in today's rapidly evolving educational landscape, the importance of informed decision-making is more critical than ever. Universities are under increasing pressure to make strategic decisions that enhance their competitiveness and sustainability, especially in light of the growing competition in higher education. Furthermore, the push to

achieve Saudi Arabia's Vision 2030 has intensified the need for innovative tools and approaches to improve decision-making processes within academic institutions.
This study examines the use of Business Intelligence (BI) systems in Saudi Arabian universities to enhance strategic decision-making. BI systems have become essential tools for organizations worldwide, enabling data-driven decisions that are more informed and strategic. However, despite the recognized benefits of BI systems, their adoption within Saudi Arabian universities has not been extensively studied, and there is a lack of sufficient research on their role in decision-making in this context. This research seeks to fill that gap by evaluating the current implementation of BI systems in Saudi universities and exploring how top management support (TMS) can improve their effectiveness.
Understanding the role of TMS is crucial, as it provides the necessary resources, guidance, and strategic direction for successfully integrating BI systems into university decision-making processes. By aligning with Saudi Arabia's Vision 2030, this study emphasizes the importance of TMS in fostering data-driven strategic decision-making and supporting the long-term success of higher education institutions.

Research Objectives: To assess Top Management Support's role in implementing BI systems in Saudi Arabian universities. To identify the critical factors within Top Management Support that influence the adoption of BI for strategic decision-making. To propose a model emphasising Top Management Support to enhance strategic decision-making in Saudi Arabian universities.

What is Business Intelligence (BI)?

Despite the growing interest in Business Intelligence (BI) for improving efficiency and decision-making, its full potential remains underutilized due to varying definitions and explanations. Foley and Guillemette (2012) analyze literature to clarify BI as both a product and a process, offering a clearer conceptual foundation to guide strategic use in organizations.

Business intelligence (BI) comprises a set of techniques, technologies, and applications used to collect, integrate, analyze, and present data to provide managers with real-time, accurate, and actionable insights into business operations and performance. This enables decision-makers to make informed and effective decisions that align with the organization's goals and objectives. Several researchers, including Foley and Guillemette (2010), have highlighted the importance of BI in supporting decision-making processes within organizations. By providing managers and decision-makers with real-time, accurate, and actionable insights, BI enables them to make more informed and effective decisions. This can help organizations gain a competitive advantage and improve their performance by enabling them to respond quickly and effectively to changing market conditions and customer needs.

Business Intelligence (BI) includes computer-based techniques for identifying, extracting, and analysing business data, such as sales revenue and associated costs. It provides historical, current, and predictive insights into business operations through reporting, analytics, data mining, and performance management. BI supports decision-making, functioning similarly to a Decision Support System (DSS). While sometimes confused with competitive intelligence, BI focuses on analysing internal structured data, while competitive intelligence examines competitor-related information. In general, BI may include elements of competitive intelligence (Elena, 2011).

What is The Role of Top Management Support?

"Top Management Support" (TMS). Typically, TMS plays a key role in the successful implementation of BI systems by: Resource Allocation: Providing necessary financial, human, and technological resources to ensure BI systems are effectively developed and maintained. Strategic Direction: Offering guidance and aligning BI initiatives with the institution's overall strategic goals, ensuring that BI systems support decision-making in critical areas. Building BI Readiness: Creating an environment conducive to BI implementation, including fostering a culture that values data-driven decision-making. Providing Training: Supporting training programs for staff to enhance their BI competencies and effectively use BI tools. In summary, TMS is essential for overcoming challenges in BI implementation, ensuring the adoption of new technologies, and fostering an environment where data-driven decision-making can thrive in universities.

Top management support plays a critical role in the success of large and complex information system (IS) projects. However, Boonstra (2013) notes that there is limited understanding of the specific behaviors that

constitute such support, as well as the reasons why it may be withheld. To explore this, the study researches the behavioral dimensions of top management involvement in strategic IS projects. Using an integrative model and analyzing five in-depth case studies, the research identifies different support behaviors and develops a framework that captures their types and purposes. The findings reveal that top management support is multifaceted and evolves. This framework can assist organizations in improving planning, managing, and evaluating executive involvement in IS initiatives.
Despite ongoing efforts, a gap between business and IT still exists in many organisations, with IT/IS professionals often attributing this disconnect to a lack of top management support. Štemberger, Manfreda, and Kovačič (2011) explore how IT/IS personnel can gain executive backing. Drawing on over 50 interviews with CIOs and CEOs, the study suggests that strong business knowledge, managerial skills, and a business-oriented role within the IT/IS department are key to securing top management support. This thesis was tested using structural equation modelling (SEM) on data from 152 Slovenian companies. The results offer practical insights for CIOs and IT professionals on how to help close the business–IT gap.

Methodology and Research Questions

This study investigates the role of top management support in the implementation and adoption of Business Intelligence (BI) systems for strategic decision-making in Saudi Arabian universities through three research questions: (1) What is the role of top management support in the current implementation of BI systems? (2) What are the critical factors within top management support that influence BI adoption for strategic decision-making? (3) How can a model be developed to enhance strategic decision-making through top management support? To address these questions, a quantitative methodology was employed, involving an online survey targeting key stakeholders such as university administrators, vice-rectors, college deans, vice deans, department heads, and faculty members. The survey explored the current state of BI implementation, challenges, and opportunities, while a literature review identified 10 critical factors for BI model development. The study achieved an 82.4% response rate, with 300 completed questionnaires collected from faculty members in administrative roles across Saudi universities, providing robust data to develop a comprehensive model emphasizing the importance of top management support.

Madanayake (2014) explore Top Management Support (TMS) as a primary factor in IT/IS project success, noting the lack of a clear definition in the existing literature. Using Mintzberg's managerial roles and a mixed-method approach, the study suggests a new, flexible definition of TMS. It identifies key roles—such as Monitor, Figurehead, and Nurturing Leader—as central to effective support. The research offers practical tools, including a validated questionnaire and framework, to help plan, manage, and improve TMS and, in turn, project performance.

Quantitative Data: Online Survey

An online survey is a data collection method that involves administering a questionnaire or set of questions to a group of people over the Internet. Online surveys are often used to gather feedback from customers, employees, or a target audience on a variety of topics such as product satisfaction, market research, or opinions on social issues. Online surveys can be conducted through various online platforms such as email, social media, or online survey software. The data collected from online surveys can be used for analysis, decision-making, and the improvement of products or services. Online surveys are often preferred due to their cost-effectiveness, ease of use, and the ability to reach a large and diverse audience quickly Smith (2013). Based on the literature review, the researcher proposed several factors for business intelligence model in Saudi universities.

Online surveys help researchers to determine the time it is expected to take to complete a questionnaire. As mentioned by Nayak and Narayan (2019) it offers various advantages, such as easy distribution and accessibility to a large number of participants without geographic boundaries. Online surveys have also proven to be beneficial in many aspects, including survey creation, efficient data collection, robust data analysis, data visualization, and collaborative work. Additionally, online surveys can save both money where the benefits of low-cost implementation for researchers and quick turnaround time, allowing researchers the flexibility to initiate, pause, and resume surveys at their convenience. Braun et al. (2021) demonstrate that qualitative surveys offer a versatile approach, possessing various applications and benefits for both researchers and participants.

Evans and Mathur (2005) discussed four main points related to online questionnaires. They conducted an analysis of the strengths and weaknesses associated with online surveys, compared online surveys with other survey formats, discussed the optimal utilization of online surveys and strategies for mitigating their potential weaknesses, and gave an overview of the online survey services provided by the world's leading research firms. Furthermore, it is emphasized that while online surveys offer significant advantages over alternative formats, it is crucial to acknowledge and address their potential weaknesses. Online surveys should be employed judiciously and only when they are the appropriate methodological choice. For the purpose of this paper, an online survey was conducted among stakeholders and decision-makers in Saudi universities. Sample diversity and random collection are essential, in order to obtain accurate and valid results from the online survey. In this context, in the study conducted by Ball (2019), there is a focus on the significance of conducting online surveys and providing valuable insights into best practices.

Survey Design

For this paper, one survey was conducted for top professional employees. The questionnaire used in the survey consisted of two main sections. Items in the first section (A) were intended to gather demographic information about the respondents. The second section (B) contained statements concerning the factors and sub-factors included in the Business Intelligence to support the strategic decision-making Model for Universities in Saudi Arabia (BIMSAU). Participants expressed their degree of agreement with each statement using a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree'.

Results

This section explains the results of an online survey conducted in Saudi Arabia using Qualtrics software.

In this survey, out of the 381 returned questionnaires, 300 (82.4% response rate) were completed and retained for analysis, while 325 invalid responses were discarded.

Table 1 below shows the survey response statistics. The analysis results contributed to the development of Business Intelligence to support the Strategic Decision-Making Model for Universities in Saudi Arabia.

Table 1. Survey Response Statistics

Results of Online Survey for Top Professional Employee			
Survey Response Statistics	**Questionnaires Distributed**	**Questionnaires Returned**	**Response Rate**
	381	325	82.4%
Survey Participants' gender	**male**	**female**	**total**
	56.3% (169)	43.7% (131)	300
Survey Participants' ages	**age**	**percentage**	**Number of participants**
	20- 24		
	25- 30		
	31- 35		
	36- 40	25.7%	77
	41- 45		
	46- 50		

	51- 55		
	56- 60		
	61- 65	0.7%	2
	Over 65	0.7%	2
Survey Participants' Qualifications	**Qualifications**	**percentage**	
	Diploma	16.3%	
	Bachelor's degree	29.7%	
	Master's degree	25.0%	
	Associate certificates	6.3%	
	PhD degree	22.7%	
Survey Participants' University type	public universities	private universities	total
	228	72	300
Survey Participants' university region	**region**	**Number of participants**	
	Riyadh region	56	
	Makkah region	28	
	Medina region	29	
	Eastern Province region	44	
	Asir region	24	
	Al-Qassim region	18	
	Jazan region	29	
	Hail region	15	
	Al-Baha region	11	
	Najran	9	
	Northern Border regions	9	
	Tabuk region	6	
Survey Participants' main college	**college**	**Number of participants**	
	College of Science	16	
	College of Business Administration	48	
	College of Sharia and Law	22	
	College of Computer Science and Information Technology	37	
	College of Design and Architecture	17	

	College of Applied and Medical Sciences	24	
	College of Education	38	
	College of Dentistry	18	
	College of Engineering	30	
	College of Public Health and Tropical Medicine	8	
	College of Pharmacy	13	
	College of Nursing	13	
	College of Arts and Humanities	9	
	other colleges	7	
Survey Participants' Position	**Position**	**Number of participants**	
	Lecturer	8	
	Dean	25	
	Vice president	1	
	Vice dean	18	
	University Vice Dean	5	
	College Vice Dean	20	
	Head of department	53	
	Coordinator	57	
	Supervisor	4	
	Unit coordinator	65	
	Others	44	
Survey Participants' years in the position	**years**	**Number of participants**	
	one year or less	47	
	two years	98	
	three years	85	
	four years	34	
	five years	24	
	more than five years	12	

To analyze the data, we used Exploratory Factor Analysis (EFA) as it best suits the nature of our study. Unlike Confirmatory Factor Analysis (CFA), which tests predefined models and hypotheses (DeCoster, 1998; Thompson, 2004), EFA allows for discovering underlying patterns without prior assumptions (Yong and Pearce, 2013). Since our goal was to uncover the key dimensions from a larger set of variables and reduce them to the most meaningful factors, EFA was the most appropriate choice (Williams et al., 2010).

We followed the five-step EFA protocol proposed by Williams et al. (2010). This process began with identifying all potential factors, followed by selecting the right extraction method. Next, we determined the number of factors, applied a suitable rotation, and finally interpreted the results. EFA's flexibility and ease of use make it ideal for survey data, especially in the early stages of model development.

The next figure presents the gender distribution of respondents, showing that 43.7% (131) of the participants were female, while 56.3% (169) were male.

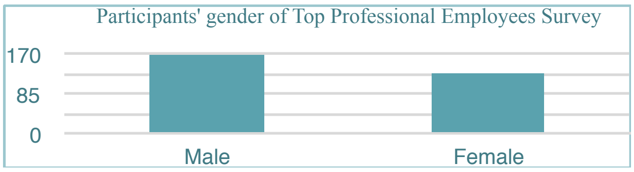


Figure 1. Survey Participants' gender

The next figure shows the age distribution of 300 participants across different age groups. The "36 to 40" age group had the largest representation, making up 25.7% of the total with 77 participants. The age groups "61 to 65" and "65 and above" were the least represented, each accounting for just 0.7% of the total, with 2 participants in each group.

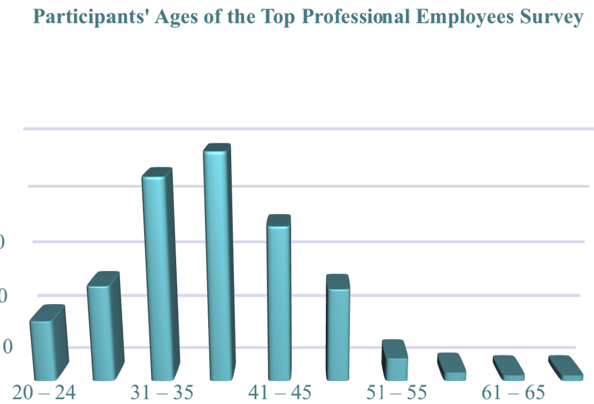


Figure 2. Survey Participants' ages

The next figure highlights the variety of educational backgrounds among the participants. Among the 89 respondents, the largest group (29.7%) holds a Bachelor's degree, followed by 25.0% with a Master's degree, and 22.7% with a PhD, contributing to the overall educational diversity. Other educational qualifications include associate certificates (6.3%) and diplomas (16.3%).

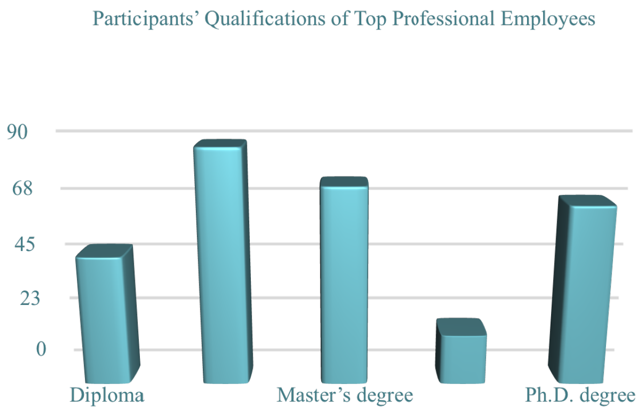


Figure 3. Survey Participants' qualifications

The next figure shows the distribution of participants by university type. Of the 300 participants, 228 are from public universities, while 72 are from private universities.

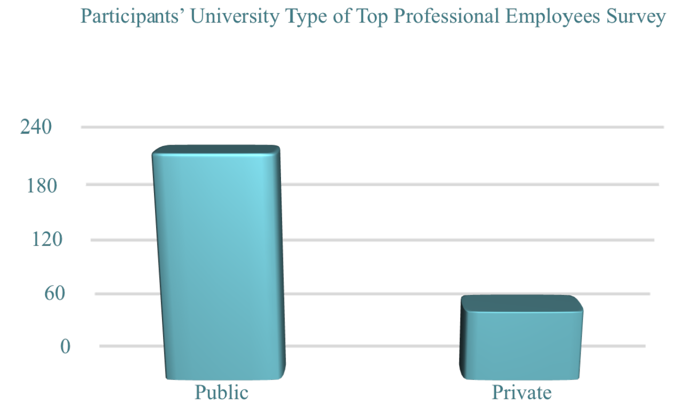


Figure 4. Survey Participants' University type

The next figure illustrates the distribution of participants by university region. Out of 300 participants, 56 are from universities in the Riyadh region, 28 from the Makkah region, 29 from the Medina region, 44 from the Eastern Province region, 24 from the Asir region, 18 from the Al-Qassim region, 29 from the Jazan region, 15 from the Hail region, 11 from the Al-Baha region, 9 participants each from the Najran and Northern Border regions, and 6 participants from the Tabuk region.

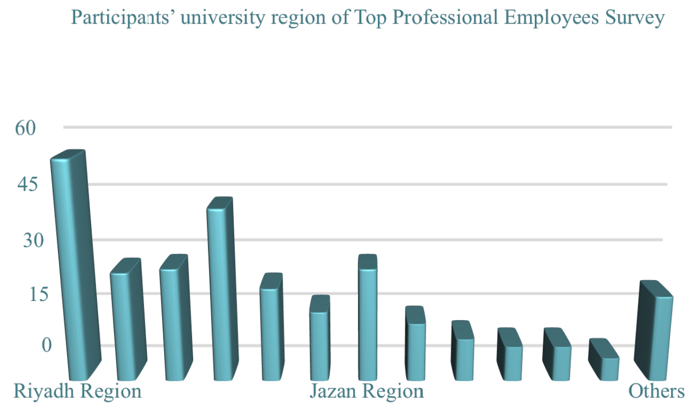


Figure 5. Survey Participants' university region

The next figure_shows the distribution of participants by their respective colleges. Among the 300 participants, 16 are from the College of Science, 48 from the College of Business Administration (the highest representation), 22 from the College of Sharia and Law, 37 from the College of Computer Science and Information Technology, 17 from the College of Design and Architecture, 24 from the College of Applied and Medical Sciences, 38 from the College of Education, 18 from the College of Dentistry, 30 from the College of Engineering, 8 from the College of Public Health and Tropical Medicine, 13 each from the College of Pharmacy and the College of Nursing, 9 from the College of Arts and Humanities, and only 7 from other colleges.

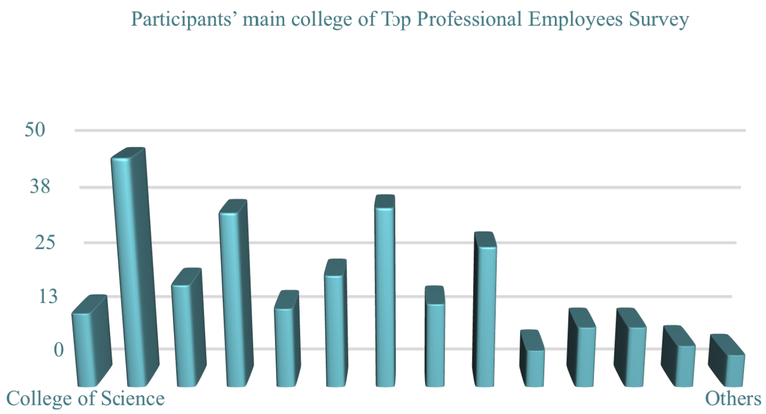


Figure 6. Survey Participants' main college

The next figure shows the distribution of participants based on the positions they currently hold or have held in the past.

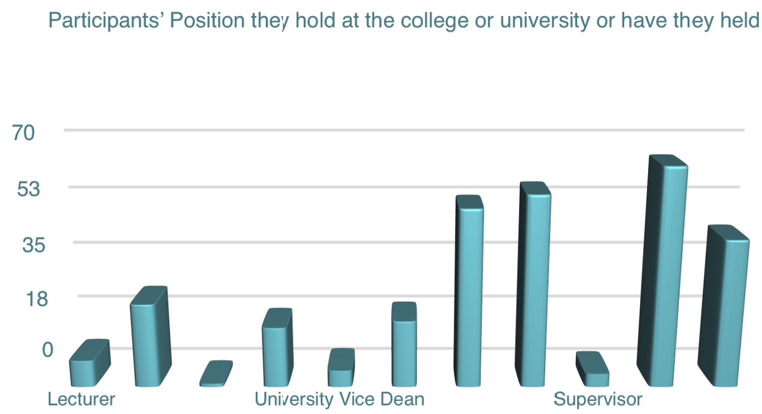


Figure 7. Survey Participants' Position

The next figure displays the distribution of participants based on the number of years they have spent in their positions. Among the 300 participants, 47 have worked in the position for one year or less, 98 for two years, 85 for three years, 34 for four years, 24 for five years, and 12 have worked in the position for more than five years.

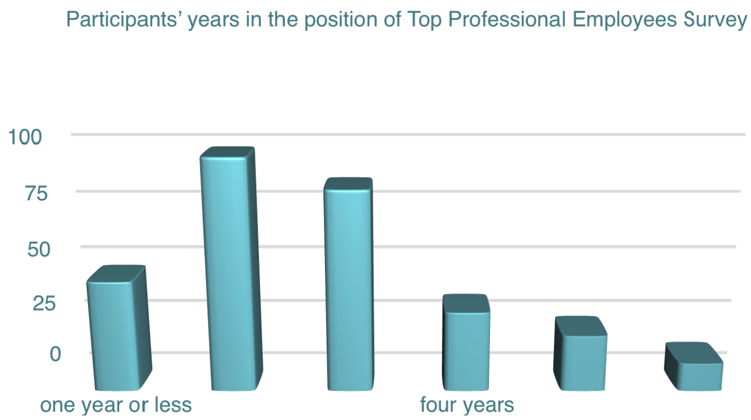


Figure 8. Survey Participants' years in the position

EFA Analysis of Top Professional Employees Survey

This section examines the data collected from the online survey targeting top professional employees in Saudi Arabian universities. The primary objective was to identify the sub-factors associated with the main factors. A systematic approach was employed to conduct a factor analysis on each main factor to uncover any related sub-factors. The main factor (top management support) was analysed in this survey. The exploratory factor analysis (EFA) was conducted using IBM SPSS Statistics version 29.

Top Management Support Factor

This section presents the analysis of items related to the "Top Management Support" factor, aimed at identifying its underlying components. The Bartlett's test of sphericity produced a significant result (χ^2 = 3239.959, df = 231, $p < .001$), and the KMO measure of sampling adequacy was notably high at 0.914 (refer to section 4.5.1.1.1). These results indicate that factor analysis was appropriate for this dataset. The reliability of the items within the "Top Management Support" factor was strong, with a Cronbach's alpha of 0.922 (as detailed in section 4.5.1.1.4.3).

To determine the number of components to retain, the researcher applied multiple criteria, as described in section 4.5.1.1.3. Ultimately, three sub-factors were selected out of four (outlined in section 4.5.1.1.3). The exploratory factor analysis (EFA) results for the "Top Management Support" factor are briefly summarized in the same table (Table 2).

Table 2. Results of EFA analysis of Top management support Factor

Total Variance Explained

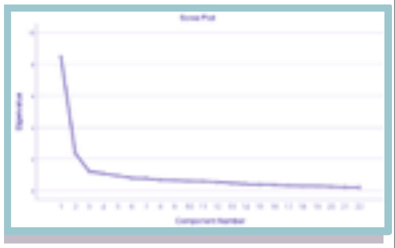
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.451	38.412	38.412	8.451	38.412	38.412	5.020	22.818	22.818
2	2.370	10.775	49.187	2.370	10.775	49.187	4.304	19.563	42.380
3	1.208	5.491	54.678	1.208	5.491	54.678	2.705	12.297	54.678

Extraction Method: Principal Component Analysis.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.914
Bartlett's Test of Sphericity	Approx. Chi-Square	3239.959
	df	231
	Sig.	<.001

	Component		
	1	2	3
Contribute to the optimal utilization of data analytics tools and technologies.	.746	.207	
Are crucial for achieving meaningful outcomes from business intelligence projects.	.745		.148
Aligns well to achieve organization-wide alignment and impactful decision-making.	.726	.118	.211
Effectively fosters a culture of strategic thinking, alignment, and efficient resource allocation.	.717	.296	.146
Adequate training in the application of business intelligence tools and techniques fosters a culture of data literacy and informed decision-making.	.651	.101	.384
Strikes a balance with other critical organizational needs, which is essential for overall success.	.578	.299	.350
Fosters a culture of continuous learning, adaptability, and data-driven decision-making.	.565	.219	.465
Ensure the sustainability and long-term effectiveness of business intelligence efforts for strategic decision-making.	.549	.476	.132
Help to align business intelligence with strategic objectives.	.389	.149	.234
Aligns with the aspiration to create a focused, agile, and strategic approach to decision-making.	.365	.296	.160
Is essential for the successful implementation of BI.		.850	.197
Is crucial for its effective implementation.	.131	.823	
Are essential for the successful implementation of business intelligence initiatives.	.144	.817	
Provides a clearer understanding of its potential impact on strategic decision-making.	.182	.741	.267
Creates a data-informed culture	.238	.599	.325
Is necessary for the effective analysis of data and making strategic decisions.	.250	.570	.199
Helps to leverage data for strategic decision-making.	.488	.489	-.199
Helps to create a knowledgeable and empowered workforce capable of data-driven decision-making.	.172	.153	.644
Is essential for effective and impactful decision-making.		.143	.630
Contributes to data-driven decisions.	.478		.601
Aligns employees' skill sets with the demands of utilising business intelligence tools for decision-making.	.528		.553
Teaches how to utilise data for decision-making.	.483	.287	.506



Reliability Statistics

Cronbach's Alpha	N of Items
.922	22

The “Top management support” factor labels are shown in Table 3. They are Resource Efficiency, BI Implementation Readiness, and BI Training.

Table 3. Sub-factor labels for “Top management support” factor

Variables	Factor loading	New sub-factor
Contribute to the optimal utilization of data analytics tools and technologies.	.746	Resource Efficiency
Are crucial for achieving meaningful outcomes from business intelligence projects.	.745	
Aligns well to achieve organization-wide alignment and impactful decision-making.	.726	
Effectively fosters a culture of strategic thinking, alignment, and efficient resource allocation.	.717	
Is essential for the successful implementation of BI.	.850	BI Implementation Readiness
Is crucial for its effective implementation.	.823	
Are essential for the successful implementation of business intelligence initiatives.	.817	
Provides a clearer understanding of its potential impact on strategic decision-making.	.741	
Helps to create a knowledgeable and empowered workforce capable of data-driven decision-making.	.644	BI Training
Is essential for effective and impactful decision-making.	.630	
Contributes to data-driven decisions.	.601	

The survey findings highlight the critical role of top management support (TMS) in successfully adopting Business Intelligence (BI) systems in Saudi universities. TMS enhances resource efficiency and BI readiness, aligning with Saudi Arabia's Vision 2030 by fostering improved strategic decision-making. The "top management support" factor is composed of three sub-factors: "resource efficiency," "BI implementation readiness," and "BI training." Notably, prioritisation was integrated into BI implementation readiness, and the education component was excluded. Among the variables, "At my university, adequate training in the application of business intelligence tools and techniques is essential for the successful implementation of BI" received the highest factor loading of 0.850, emphasising its importance. Conversely, "At my university, the prioritisation of business intelligence helps to leverage data for strategic decision-making" had a lower loading of -0.199, indicating its relatively weaker impact.

Future Research and Limitations

This study has several limitations that provide opportunities for future research. The focus on Saudi universities limits the generalizability of findings to other sectors or educational settings. Additionally, the reliance on self-reported survey data, despite a high response rate, introduces the possibility of response bias.

The use of cross-sectional data also limits the ability to capture long-term effects and trends. Future research could address these limitations by expanding the scope to include other educational institutions or sectors, conducting longitudinal studies to explore the evolving role of top management support over time, and undertaking comparative studies to assess the applicability of findings across different sectors.

Conclusion

This study highlights the substantial role of top management support (TMS) in the adoption and effectiveness of Business Intelligence (BI) systems within Saudi Arabian universities. By consolidating resource efficiency, enhancing implementation readiness, and preferring adequate training, TMS serves as a fundamental for integrating BI systems into strategic decision-making processes. These systems enable universities to leverage data-driven insights, thereby aligning institutional practices with the objectives of Saudi Arabia's Vision 2030.

The research underscores how TMS contributes to overcoming challenges in BI adoption, including resource allocation and readiness, to ensure institutions are better equipped to navigate the competitive landscape of higher education. The findings reveal that adequate training in BI tools and techniques plays a critical role in successful implementation, highlighting areas for targeted improvement. However, the study also identifies that prioritization of BI for strategic decision-making presently has a weaker impact, suggesting a need for further alignment of institutional priorities with BI objectives.

Despite its valuable contributions, this study acknowledges several limitations. Its focus on Saudi universities limits the generalizability of findings to other contexts, while the reliance on self-reported survey data introduces chance bias. The use of cross-sectional data further constrains the ability to analyse long-term impacts. These limitations present avenues for future research, including expanding the field to other sectors, conducting longitudinal studies to track the evolving role of TMS, and undertaking relative studies to estimate broader applicability.

By bridging gaps in existing research, this study provides a foundation for enhancing the strategic use of BI systems in universities. It calls for continued emphasis on TMS to ensure that universities not only adopt BI systems effectively but also sustain and evolve their use to meet future challenges. Through this, Saudi Arabian universities can become stronger and support their role as innovators in education, contributing meaningfully to the realization of Vision 2030.

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Promoting Sustainable Living using Green IT: Key Governance Factors for Pakistani Organizations

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Abstract: *The information technology (IT) industry is currently grappling with challenges in meeting environmental, economic, and sustainability goals. To tackle these challenges, it is crucial to assess the industry's performance in sustainable operating standards and compare best practices with traditional methods. This study was conducted to identify the governance factors necessary for promoting Green IT (GIT) practices in Pakistani organizations. The aim of developing a sustainable GIT model for organizations in Pakistan (SGITMOP) is to mitigate the adverse effects of IT usage and recycling issues in line with Pakistan's goal of achieving its environmental sustainability goals by 2030. An online survey was conducted to determine the governance factors necessary for Pakistani organizations to implement GIT. The survey collected 402 valid responses, and factor analysis and alpha testing were conducted to identify the key factors related to governance. Two essential factors for the successful adoption of a GIT governance model in Pakistan were identified: green IT business strategy and green IT governance. These factors are crucial in reducing pollution and promoting eco-friendly practices in Pakistani organizations for the benefit of the environment and future generations. This study focused on governance factors, and future research will explore GITM.*
Keywords: *Green IT, governance, organization, Pakistan, sustainability, environment*

Introduction

This research reviews the current literature on sustainability and Green Information Technology (IT) and analyses Green IT models for worldwide organizations. It identifies the governance and key factors of an initial Green IT model for Pakistan and other developing countries. The study describes the target population, specifies the research question, and explains the data collection process. Through data analysis, new key governance factors are identified. Moreover, this paper followed by theoretical and practical implications, limitations, and future research.

1. Sustainability

The term 'sustainability' comprises two words 'sustain' and 'ability', and it is a characteristic of any system that continues to be productive in the long term (Heinberg & Lerch, 2010). It can be argued that "the term 'sustainability' should be viewed as humanity's target goal of human-ecosystem equilibrium (homeostasis)" (De-Pablos-Heredero, Montes-Botella, & García-Martínez, 2018, p. 1; Koch, 2020). The concept of sustainability has been manifested in the cultures of various indigenous people. For instance, leaders had to take into account the impact of their decisions on the seventh generation (Ceko, 2023; Newton, 2003). "The word 'sustainability' (German: Nachhaltigkeit) first emerged in 1713 in the book Sylvicultura Oeconomica by German forester and scientist Hans Carl von Carlowitz. Later, French and English foresters adopted the practice of planting trees as a path to "sustained-yield forestry"" (Heinberg & Lerch, 2010, p. 1).

1.1 Why is Sustainability Important?

Currently, no country can meet its basic needs while simultaneously using sustainable resources (Ceko, 2023; O'Neill, Fanning, Lamb, & Steinberger, 2018). To ensure a balance between societal needs and the environment, alternative strategies are needed to promote a sustainable socio-ecological system. Therefore, business as usual will not provide a sustainable socio-ecological system. Even well-intentioned management practices, such as restoration and conservation initiatives, can hinder the recovery of natural systems and even negatively impact human well-being and population size (Henderson & Loreau, 2018, 2023).

1.1.1 Challenges of Sustainability

Several authors have identified challenges associated with developing, selecting, and implementing sustainability indicators (Denčić-Mihajlov & Zeranski, 2018; Hristov & Chirico, 2019; Kravchenko, Pigosso, & McAloone, 2020; Verma & Raghubanshi, 2018). The method of developing sustainable development indicators is subject to much debate (Alaimo & Maggino, 2020; AtKisson, 2021; Fukuda-Parr & Muchhala, 2020) because, often, indicators are developed using unsound methodologies (Borysova, Monastyrskyi, Borysiak, & Protsyshyn, 2021; Mori & Christodoulou, 2012).

Prior to establishing a sustainable indicator framework, a preliminary assessment is an essential first step. Indicator frameworks are determined by government policy, the involvement of government departments, the scope of urban boundaries, the time period, and whether updated urban conditions are taken into account (Shen & Zhou, 2014). Mostly, urban sustainability assessments are concerned with the environment within city boundaries (Marvuglia et al., 2020). According to Rahman (2021), public departments play a crucial role in creating indicators since they implement and report progress on sustainable development. Using a responsibility-based approach, their proposal ensures that all public departments are included in the scope and tasks of the process.

1.1.2. Advantages of Sustainability

International cooperation and cross-referencing are increasingly important as sustainable development is a regional, national and global issue (Ponce & Escuadra, 2024). In addition to local concerns such as the conservation of water, reduction of fuel consumption and using biodegradable materials, sustainability is part of a set of universal priorities for all of us on this planet (Fien, Maclean, & Park, 2008).

The concept of sustainability solely in terms of environmental issues is also inadequate, since poverty, energy access, food security, shelter, and other social concerns are inextricably linked to environmental problems (Hassan & Umar, 2024). A deeper understanding of these issues and their interrelationships is crucial. Only then will sustainability be feasible: when it is framed holistically as a responsibility of businesses and other institutions. The assumption of responsibility is intrinsically linked to values and identity and is, therefore, enduring (Farias & Farias, 2016).

1.2. Relationship between Business Sustainability and Green Technology

Business sustainability is considered a core component of corporate sustainability management. Human resource management activities can have a positive impact on both environmental and economic performance (Singh Sanjay, Manlio, Roberto, & Domenico, 2020). As a result of sustainable business development, an organization can achieve the environmental goal while meeting the sustainable corporate development goal. A company's sustainability performance can be measured by its environmental pollution governance, social and market share, and profitability (Sharma, 2000). Business sustainability is related to social, corporate, and economic sustainability (Ashrafi, Magnan, Adams, & Walker, 2020).

The concept of social performance extends the concept of corporate social responsibility by emphasizing actual results achieved by economic stakeholders (Asiaei, Bontis, Barani, & Jusoh, 2021) It has been argued that corporate social performance is a broad concept that describes a wide range of diverse phenomena. Corporate social responsibility (CSR) cannot be effective if it does not contribute to corporate social performance. Corporate social responsibility is closely related to social performance. However, it differs in that it examines whether corporate social responsibility initiatives have provided the desired results (Sheehy & Farneti, 2021). A company's social performance is significantly influenced by the ethics and values of its executives (Dey, Bhattacharjee, Mahmood, Uddin, & Biswas, 2022). The social performance of the manufacturing industry is positively related to corporate social responsibility, which leads to green technology (Jawad, 2020).

1.3. Sustainable Development Goals (SDGs)

Over the past two decades, environmental degradation and social tensions have put societies under severe pressure. In September 2015, 193 countries signed the United Nations sustainable development goals (SDGs) for 2030, also known as “17 global goals”. In order to determine long-term investment and business opportunities, businesses can use the SDGs, and their sub-targets, as a crystal ball to "look into the future" (David, 2015; Leggett & Carter, 2012; Pedersen, 2018).

2. Green IT

Green IT involves a set of people, processes and technology aimed at preventing pollution, promoting environmental stewardship (or environmentally responsible product design) and fostering sustainable development (Tan, Pan, & Zuo, 2015). Furthermore, IT can support various green initiatives by simulating complex scenarios and supporting decisions on resource utilization (Murugesan, 2008). For example, simulations can help design greener buildings, predict thermal effects, or optimize resource applications so as to prevent resource waste (Au, Xu, Wang, & Fung, 2017). Several researchers refer to Green IT as "information systems for environmental sustainability" (Au, Yiu, & Fung, 2018; Melville, 2010; Watson, Boudreau, & Chen, 2010).

In computing, many natural resources are consumed in manufacturing computers, generating energy, and disposing of hardware (Ahmad, Mishra, & Sharma, 2023). The Environmental Protection Agency in America introduced green computing, also known as Green IT, which emphasizes energy efficiency and environmental friendliness in hardware and computer resources that are energy efficient and energy-efficient (Siswanti & Muafi, 2020). IT refers to the study and practice of using computers and IT resources in an environmentally friendly manner (Agarwal, Goswami, & Nath, 2013). A growing concern of the 21st century businesses is that social issues and environmental impacts are linked to IT. To protect our future, and as a market segment, sustainability has become a top priority within the IT world. Across the globe, there has been a recent focus on greening IT and information systems (ISs) (Mishra, Yazici, & Mishra, 2012).

2.1 Green IT in Pakistan

In developing countries such as Pakistan, the adverse impact of IT products is increasing, which is making academics and practitioners aware of the dire need to adopt Green IT practices. Although researchers have proposed various models for IT adoption, it is still unclear which model would be the most appropriate for a specific context (Ali, Javed, & Danish, 2021). Globally, countries adopted the 2030 Agenda for sustainable development and its 17 sustainable development goals (SDGs) in 2015. By 2030, Pakistan will join the league of upper middle-class countries if it achieves the SDGs. Moreover, Pakistan became the first country in the world to adopt SDGs 2030 through a unanimous resolution of the Pakistani parliament ("Transforming our world: the 2030 Agenda for Sustainable Development," 2021).

There is no doubt that Green IT is key to achieving SDGs, as it reduces greenhouse gases, carbon footprints, and energy usage and, most importantly, it produces less e-waste. Hence, it has now become a standard for numerous companies and organizations worldwide (Dalal, 2021; Phuong, 2024). Several laws and programs

have been implemented by the Pakistani government to reduce the country's carbon footprint and promote sustainable growth (Ilyas et al., 2024). However, to the best of the researcher's knowledge, no Green IT model has been proposed for organizations and businesses in Pakistan. Accordingly, a Green IT model designed for these sectors in Pakistan would play a key role in helping this country to achieve some of its SDGs which are related to one of the objectives of the Pakistan Vision 2030: to ensure environmental sustainability (Vision 2030, 2007).
According to a UN report, during the dismantling and recycling of electronic waste, Pakistanis are exposed to health hazards (ANI, 2021). Also, there is a shortage of energy resources in Pakistan (Qureshi, 2021). The Global Alliance on Health and Pollution estimates that in Pakistan, annually, 128,000 people die from illnesses related to air pollution (Hadid, 2020). These problems can be reduced by increasing public awareness of sustainability and Green IT (Jing, Zashif, & Di, 2024).

3. Determining the Key Factors for Initial Model

Four key factors of green IT governance were identified in a literature review of 25 Green IT models around the world.

5.1. Governance

In figure 1, governance has four key factors: 1. policy (Philipson, 2011), 2. contingency (Schmidt and Kolbe 2011), 3. IT governance mechanism (Hardin-Ramanan, Chang, & Issa, 2012, p. 154), and 4. business strategy (Hba & El Manouar, 2018). Governance must allocate budget and resources to green IT initiatives and choose the metrics that will be used to determine the impacts of the initiatives (Molla, Cooper, & Pittayachawan, 2011). IT governance also addresses the inspirations factor that affects enterprise policy, leadership structure, financial considerations, and behaviours of IT enterprise management (Jnr, Abdul, & Awanis, 2018; Lee, Dwivedi, Tan, Ooi, & Wong, 2024). A green IT policy framework is needed to ensure that Green IT becomes an integral part of business initiatives rather than a stand-alone IT project (Philipson, 2011). In addition, green IT governance is dependent on contingency factors such as firm size, competitive strategy, and organizational structure (Almaqtari, Farhan, Yahya, Al-Dalaien, & Shamim, 2023; Schmidt & Kolbe, 2011). Furthermore, the IT governance mechanism includes "formal IT positions such as the CIO or IT steering committee connecting IT and business in IT decision making (structures), IT governance methodologies or processes that facilitate IT decision taking and monitoring, and relational mechanisms for shared IT understanding between business and IT executives" (Hardin-Ramanan et al., 2012, p. 154). The business strategy indicates a company's market positioning (market or product), its distinctive competencies, and how it operates (Hba & El Manouar, 2018). By utilizing Green IT, energy costs will be reduced and equipment will be more energy-efficient (Chai-Arayalert & Nakata, 2011; Chidolue et al., 2024).

Figure 1. Four key factors of governance (prepared by Authors)

4. Purpose of Research

This research was conducted to identify and understand the factors required to develop a sustainable Green IT model for Pakistani organizations (SGITMOP) that will benefit stakeholders including organizations, governments, and companies by proposing ways to promote Green IT adoption within the framework of Pakistan's 2030 Vision. The study also assessed the level of organizational awareness of sustainability and Green IT in Pakistan, examining employers' and employees' perspectives and attitudes towards the governance factor in Green IT models. Table 3.1 shows the research questions and objectives that have been formulated to achieve this goal.

Research Question - What key governance factors will be required to promote sustainable living through green IT for organizations in Pakistan?
Research Objective - To determine the key governance factors required to promote sustainable living through green IT for organizations in Pakistan.

5. Target Population

Potential participants were chosen based on their knowledge of and experience with IT. The researcher benefitted from the knowledge and perspectives of individuals who are very familiar with Green IT and sustainability and can shed light on the factors that could influence the adoption of Green IT in Pakistani organizations. In order to cover all crucial factors and determine their significance, it was essential to obtain IT experts' viewpoints on Green IT. Therefore, the target population for this phase of the study comprised a director, CEO, IT manager, chief, or officer. In this population, the concepts of Green IT and sustainability are better understood, as well as how they can be used in decision-making and governance.

6. Survey Data Analysis

This research adopted the Statistical Package for Social Sciences (SPSS) version 26 for the analysis of raw data obtained from questionnaires, which require analytics software to clean data and identify errors (Rovai, Baker, & Ponton, 2013). In this study, factor analysis was employed to identify the most important factors and reduce the number of factors. By identifying the differences between observed variables, factor analysis reduces the total number of variables (Williams, Onsman, & Brown, 2010). There are two main types of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Brown & Moore, 2012). To determine the factors to be considered in the proposed model, EFA was used in this research.

EFA is generally used to discover and analyse the factors that influence the variables (Howard, 2016). As Marsh et al. (2009) explain, EFA helps to clarify the underlying dimensions of a construct. Factor analysis is exploratory in nature and involves conceptual/theoretical, design, statistical, and reporting considerations.

7. Data collection

The survey methodology adopted for this study is used mostly in exploratory and descriptive research (Bell, Bryman, & Harley, 2022) to collect primary and secondary data from a sample in order to generalize the findings (Park, 2006).

7.1. IT experts survey

A total of 35% of respondents were females (141), while 64.8% were males (261). Figure 2 shows the gender of respondents.

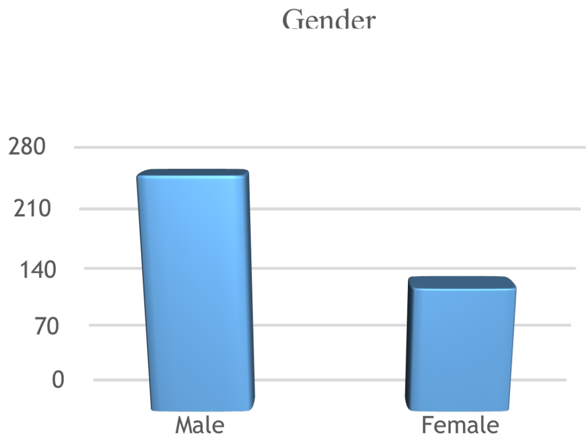


Figure 2. Participants' Gender (prepared by Authors)

7.1.1. Governance

In this section, items associated with the "governance" factor are analyzed to derive its subfactors. A PCA technique was used to analyze the 16 variables by using the Orthogonal Varimax rotation method.

Table 4.5 summarizes the EFA results for the "governance" factor. In this table, the KMO score of 0.912 (superb) exceeds the recommended standards, and Bartlett's test of sphericity result of ($\chi 2$ = 2737.62, df = 120, p < .000) indicates a significant correlation. The factor is suitable for factor analysis. Moreover, the "governance" factor has excellent reliability, as indicated by a Cronbach's alpha of 0.912 for all items.

Using the eigenvalue rule, cumulative percentage of variance, and scree test techniques, the researcher determined the number of components to retain. Table 4.5 presents the scree plot showing the curves flattening at component number three, indicating that components 1 and 2 can be extracted, and all meet the Eigenvalues-Greater-Than-One rule. Based on the scree plot and Kaiser's criterion, the researcher extracted the first two components. The two factors contributed 26.135% and 25.089% of the total variance, and all of them together accounted for 51.221%. Moreover, each factor had an internal consistency reliability > 0.8, which is considered a 'good value'.

For both components, a number of variables loaded distinctly. Since the factor loadings shown in the Table 1 are greater than .60, they have very good convergent validity.

Table 1. EFA analysis results for “governance” (prepared by Authors)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.948	43.427	43.427	6.948	43.427	43.427	4.182	26.135	26.135
2	1.247	7.794	51.221	1.247	7.794	51.221	4.014	25.087	51.221
3	.982	6.139	57.360						
4	.850	5.315	62.675						

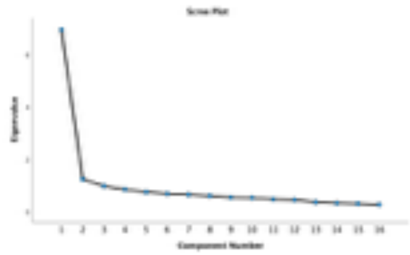
Extraction Method: Principal Component Analysis.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.916
Bartlett's Test of Sphericity	Approx. Chi-Square	2737.625
	df	120
	Sig.	.000

Rotated Component Matrix[a]

	Component 1	Component 2	Communalities
E-waste recycling	.715		0.558
Cloud computing	.689		0.520
Useful and precise information on the functioning of green IT	.681		0.519
Energy star-labelled products	.674		0.519
Ongoing improvement of green IT	.660		0.528
A positive culture of green IT	.656		0.519
A reward and incentive system to encourage green IT practices	.652		0.513
Remote working			0.338
Increase credit availability		.739	0.594
Reduce the risks of uncertainty		.696	0.536
Ensure sustainability as an integral part of business operations		.687	0.591
Improve public relations		.673	0.499
Prevent panic		.646	0.452
Establish a program to reduce e-waste (e.g., appropriately recycling old desktop computers)		.636	0.526
Include an effective power-management system		.625	0.524
Aim to reduce energy consumption (e.g., turning off idle computers)			0.457
Alpha	0.858	0.865	



Governance	
Cronbach's Alpha	**0.912**

The "Governance" factor comprises two sub-factors: "Green IT governance" and "Green IT business strategy". An IT experts survey confirms these sub-factors. As the two sub-factors "policy" and "contingency factors" were not confirmed by the survey, these will be included in the qualitative phase (through the online interview). For the governance factor, the variable "increase credit availability" was assigned the highest loading of 0.739, while "include an effective power management system" received a lower loading of 0.625. The "governance" factor labels are shown in Table 2.

Table 2. Sub-factor labels for "Governance" (prepared by Authors)

Governance		
Items	New Sub-Factor	Alpha
E-waste recycling	Green IT Business Strategy	0.858
Cloud computing		
Useful and precise information on the functioning of Green IT		
Energy star-labelled products		
Ongoing improvement of Green IT		
A positive culture of Green IT		
A reward and incentive system to encourage Green IT practices		
Increase credit availability	Green IT Governance	0.865
Reduce the risks of uncertainty		
Ensure sustainability as an integral part of business operations		
Improve public relations		
Prevent panic		
Establish a program to reduce e-waste (e.g., appropriately recycling old desktop computers)		
Include an effective power-management system		

Table 3 shows the new factors of governance that are required to promote sustainable living through green IT for organizations in Pakistan. This will answer the study's research question and objective.

Table 3. New key factors for governance in Green IT model (GITM) (prepared by Authors)

	Initial Factor	IT- Experts (Alpha)	New Factors
Governance	Green IT governance mechanism	Green IT Governance (0.865)	Green IT Governance
	Business Strategy	Green IT Business Strategy (0.865)	Green IT Business Strategy
	Policy		Not confirmed
	Contingency factors		Not confirmed

Figure 3 shows the key governance factors for organizations in Pakistan.

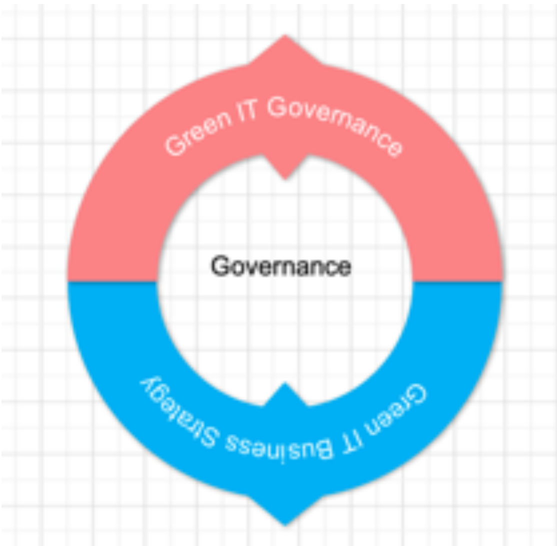


Figure 3. Two key factors of governance (prepared by Authors)

8. Recommendation

A smart technology strategy is essential to the success of Green IT. Consequently, the governance team needs to ensure that the Green IT strategy is working properly in terms of recycling, procurement, reuse, etc. It is recommended that organizations monitor Green IT and measure its effectiveness in reducing carbon footprints.

9. Theoretical Implication

This study will contribute to the research on Green IT adoption in Pakistan by providing information about the factors that influence employers and employees' behaviors and attitudes regarding the use of Green IT by organizations. Moreover, Pakistan and other developing and developed countries can benefit from the findings in terms of sustainable development and climate change, which are among the most urgent problems of our time. In this regard, this research will benefit the researchers and academicians. By using an exploratory approach and examining the significant levels of governance factors collectively, this research contributes new knowledge to the literature in this essential field.

10. Practical Implication for Vision 2030

In terms of practical application, the findings have the potential to facilitate the adoption of Green IT and sustainability in Pakistan as well as providing practical solutions for improving Green IT use. Green IT may help to mitigate the health hazards, caused by electronic waste, by dismantling and recycling devices and their components (Okwu, Hursthouse, Viza, & Idoko, 2022). It will help to conserve energy resources (Malik & Qureshi, 2021) in Pakistan, and reduce harmful emissions and pollutants, which are welcome outcomes of sustainable practices. (Khan, Shah, & Khan, 2022).

11. Study Limitations and Future Research

The research was carried out in several cities and provinces of Pakistan, with the organizations in Punjab province being predominant. In spite of this limitation, it is anticipated that this research will give a better understanding of factors that need to be considered so as to successfully implement Green IT in Pakistani organizations. Furthermore, as a first milestone, the findings of the research can be applied and implemented in organizations.

In this study, data was collected from employees and employers in Pakistan using a cross-sectional approach. It is recommended that future research use a longitudinal approach to examine how different sub-factors interact to influence the adoption of Green IT in Pakistan.

Future research could use sequential hypothesis testing to assess whether sufficient evidence has been collected during each step of the data analysis process using structural equation modelling (SEM).

The suggestions for future research directions may be useful to academic researchers both in developed and developing countries. It is feasible to tailor and apply the governance factors for Green IT to South Asians and Western Asians who share similar cultures, religions, socioeconomic and financial systems.

Conclusion

This paper reviews the current literature on sustainability, Green Information Technology (IT), and analyses 25 Green IT models for worldwide organizations. It identifies the two key factors of governance in Green IT model (GITM) in Pakistan and other developing countries. Online surveys confirm the two key governance factors of Green IT governance and Green IT business strategy. To reduce carbon footprints, organizations should monitor Green IT governance and Green IT business strategy. A theoretical framework contributes to current literature concerning sustainable development, climate change, and Pakistani organizations' attitudes and behaviors regarding Green IT. In addition to the practical significance, this study contributes to promoting sustainability in the business sector by providing green IT solutions. It may also contribute to Pakistan's Vision 2030 regarding SDGs. The research was conducted in several cities and provinces of Pakistan, with Punjab province being the most dominant area. In future, the governance framework for Green IT can be tailored and applied to South Asians and Western Asians who share the same culture, religion, socioeconomic and financial systems as South Asians.

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Enhancing Organizational Resilience Against Social Engineering Attacks: A Study on Saudi Arabian Organisations

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Abstract: *This research addresses the growing threat of social engineering attacks by focusing on the organizational factors that strengthen the resilience of Saudi enterprises. Social engineering attacks are becoming increasingly sophisticated; hence, it is crucial to understand how organizational factors can mitigate these risks. This study consolidates key elements into a streamlined model by conducting an online survey and exploratory factor analysis. Understanding the key organizational factors strengthens resilience against social engineering, enabling enterprises to implement better strategies for protection. This study offers a practical framework for strengthening defences and providing a holistic approach to cyber security. The research question posed is: How do organizational factors collectively improve an organization's resilience to social engineering attacks? The study's findings highlight the importance of a holistic approach, showing that transformational leadership fosters a strong security culture, organizational preparedness integrates security culture with awareness programs, and technological safeguards are essential for proactive threat detection and prevention. Security policies provide a foundational framework for governing employee behavior and response mechanisms. This study offers valuable insights into the optimization of security strategies by focusing on the most impactful organizational factors. This study's reliance on self-reported data suggests a limitation, indicating that future research should include longitudinal studies to assess the long-term impact of these factors.*
Keywords: *social engineering; organizational resilience; cyber security; transformational leadership; Saudi Arabia; security culture; security training*

1. Introduction

The digital world offers various advantages and benefits to individuals and society in general. Digital technology has become necessary for daily activities such as the sharing of information, distance learning, online business and banking transactions, and e-commerce, to name a few. In many respects, the digital world has made users' dealings and communications in a variety of contexts easier, faster, and more sophisticated. However, at the same time, Internet users face many challenges, such as security attacks. Many attackers exploit the vulnerabilities of networks and systems to gain unauthorized access and obtain information. On the other hand, other attackers exploit human susceptibilities and use psychological and social ploys to obtain sensitive information from the victim.

Social engineering is a security threat whereby attackers use non-technical methods to deceive users and obtain valuable information by means of a variety of psychological and social tricks. It is considered one of the most dangerous attacks, leading to enormous financial and informational losses. Unfortunately, there is a noticeable lack of awareness of this issue among end users. Reviewing the previous literature has demonstrated that user behavior and attitudes towards social engineering are affected by numerous factors. These factors were identified from previous research and categorized under “organizational factors”.

2. Background

2.1. Social Engineering Threats

In the context of information security, social engineering is considered to be an attempted attack that threatens the assets of individuals and organisation (Salahdine & Kaabouch, 2019). According to Wang , Sun, & Zhu (2020), unlike traditional attacks that exploit software vulnerabilities, social engineering is the art of deceiving, manipulating, and exploiting individuals' weaknesses to convince them to divulge valuable information. It relies on deception and persuasion techniques to influence security decisions (Muscanell , Guadagno, & Murphy, 2014). Social engineering has been a popular attack method since the 1970s, as it is often cheaper and more effective than technical breaches (Hadnagy , 2010). According to Salahdine and Kaabouch (2019), there are three types of social engineering assaults: social, technical, and physical. Social-based attacks are carried out by interacting with the victim in person in order to obtain certain information. This type is the most dangerous and successful attack as attackers exploit human vulnerabilities (Salahdine & Kaabouch, 2019). Conversely, technical-based attacks are performed over the Internet via email or social networks. Physical-based attacks are those where attackers use physical means to gain information about a victim by, for instance, rummaging through trash cans for important files. Social engineering could be conducted by combining these three types of attacks. Phishing, pop-up windows, ransomware, SMSing, baiting and ‘dumpster diving’ are just a few forms of social engineering attacks (Salahdine & Kaabouch, 2019).

Social media has further expanded the landscape for social engineering attacks. Bergmann and Solheim (2024) highlight that social media platforms expose users to increased risks by providing attackers with personal information that can be exploited for manipulation. Malicious actors use psychological triggers such as excitement, fear of authority, and fear of loss to trick users into revealing sensitive information (Aun et al., 2023). Moreover, the emergence of generative artificial intelligence (AI) has significantly amplified the scale and effectiveness of social engineering attacks. Yu et al. (2024) argue that AI-driven attacks introduce a new level of sophistication, enabling the automation of large-scale phishing campaigns with hyper-personalized content. The ability of AI to generate realistic dialogues and adaptive interactions erodes user trust in human-computer interactions, making it increasingly difficult to distinguish between legitimate and fraudulent communications (Schmitt & Flechais, 2024). As AI technology becomes more powerful and accessible, the barriers to misuse decrease, creating an urgent need for proactive countermeasures to mitigate the growing risks of AI-enhanced cyber threats.

2.2. Social engineering in the organizations' context

Information security is vital to every company's success and viability. It is an important issue to discuss with every employee because securing the organization is the responsibility of every worker (Al-Mohannadi et al., 2018). According to (Khando et al., 2021), over 77% of data breaches at firms are caused by the exploitation of human flaws, while over 50% of security breaches are due to employees’ failure to comply with security protocols. Employees are considered the weakest link in the security system of a company (Ivaturi & Janczewski, 2011; Schaab et al., 2017). Thus, social engineers exploit employees' weaknesses and lack of awareness in order to gain access to companies' systems and obtain sensitive information (Kalniņš et al., 2017). According to (Saxena et al., 2020), social engineering attacks can result in significant losses of data, money, reputation, and staff morale. Recent research showed that 70% of data breaches result from social engineering attacks (Langlois, 2020). Notably, phishing, the most common form of social engineering, ranks first among the 16 most notorious types of attacks (Langlois, 2020). Salahdine and Kaabouch (2019, p. 2) reported that breaches resulted from a phishing attack whereby the attackers sent thousands of emails to a bank customer company in America and managed to access the sensitive data of 145.5 million customers. Financial losses from these attacks are considerable, and it is difficult for organizations to compensate for them, not to mention the information losses, which affect companies' reputations. Hence, organizations must increase their employees' awareness of social engineering attacks by providing good training programs, establishing policies, and conducting awareness campaigns (Aldawood & Skinner, 2019). However, to get the most out of these policies and training programs, an in-depth understanding of this phenomenon is required (Shahbaznezhad et al., 2021).

2.3 Social Engineering in Saudi Arabia

In developing countries such as the Kingdom of Saudi Arabia (KSA), the adverse impact of social engineering attacks is increasing, making it one of the most challenging attacks that target individuals and organizations. Several studies have investigated social engineering in the KSA, most of which measured Saudi people's awareness of such threats. For instance, a recent survey in the KSA's educational sector showed that 66% of 465 participants had limited awareness of social engineering, while those with greater security knowledge demonstrated greater awareness (Alsulami et al., 2021). In addition, Alotaibi et al. (2016) found that despite good IT skills, participants had limited cybersecurity knowledge and poor security practices in Saudi Arabia. For instance, Saudi users generally use weak passwords as these are easier for them (Alotaibi et al., 2016). Alkhaiwani and Almalki (2021) claimed that Saudi culture strongly influences users' security awareness, and organizations struggle to defend themselves against social engineering assaults owing to cultural influences. Alkhaiwani and Almalki (2021) emphasized that information security awareness programs must consider cultural factors. Moreover, according to Alkahtani (2018), Saudi Arabian people have a trusting culture which could make them vulnerable to security threats such as social engineering. Alkahtani (2018) noted that Saudi employees often trust colleagues, allowing them to use personal devices, and show a lack of awareness of basic security practices as they often share passwords or stick them on screens. Alkhaiwani and Almalki (2021) highlighted a lack of guidance for workers on handling attacks. Similarly, Alarifi et al. (2012) found low information security awareness in Saudi Arabia, partly due to cultural factors.

In Saudi Arabia, there has been a significant increase in the number of phishing attacks on both individuals and organizations. According to (Zamel, 2024), there were 709 million attempts to access phishing and scam sites in 2023, representing a 40% increase compared to the previous year. Kaspersky's report revealed over 500 million lures to fraudulent websites globally, with a notable rise in threats across the Middle East and Africa (Riyadh, 2024). In Saudi Arabia, phishing attacks surged significantly, with a 157% increase detected in Q2 2023 compared to Q1 (Riyadh, 2024). In addition, a Kaspersky Security Network (KSN) report revealed a 5% rise in cyber-attacks targeting small and medium-sized businesses (SMBs) in Q1 2024 compared to the same period in the previous year. During this time, 2,402 SMB users were exposed to malware and unwanted programs disguised as legitimate software. Additionally, over 4,110 malicious files were distributed, marking an 8% year-on-year increase in malicious activity (nabd, 2024).

Phishing threats are the most effective form of social engineering attack. According to Zawya news, users in Saudi Arabia are affected mainly by phishing threats. This could be a consequence of the increasing number of Internet users in Saudi Arabia, reaching 36.84 million. At the beginning of 2024, 97.9% of the Saudi population were using the Internet (DataReportal, 2024). Additionally, 94.3 % of the total population use social media networks in the KSA (DataReportal, 2024). Therefore, due to this reliance on the Internet, users interact on various platforms, which could make them more susceptible to social engineering attacks. Another important point worth noting is the effect of the Covid-19 pandemic, which transformed the way that people conducted their daily activities. This transition to digital technology is likely to increase the number of cyber threats and attacks. Also, during the pandemic, 96% of Saudi businesses were threatened by cyber-attacks and could not deal with such attacks promptly (Almrezeq, 2021).

All the aforementioned studies and the statistical data demonstrate the danger posed by social engineering, not to mention that the KSA has only recently become interested in cyber security awareness. In 2017, King Salman launched the national cyber security authority (NCA) after several crippling cyber-attacks that occurred in the KSA (Ouassini & Boynton, 2021). Therefore, studying factors related to Saudi employees' awareness of social engineering may help to mitigate this problem.

3. Organizational factors

In response to the growing threat of social engineering attacks, this study explores the key organizational factors that contribute to building resilience to these attacks, particularly for Saudi Arabian enterprises. By identifying and understanding factors such as leadership, security training, and organizational culture, this research proposes a framework for strengthening organizational defenses against social engineering.

Organizational factor has four sub-factors: transformational leadership, countermeasure, security training and awareness programs and information security culture. Social engineering is regarded as one of the most dangerous security breaches that face organizations (Krombholz , Hobel, Huber, & Weippl, 2015). Even though many automated cybersecurity solutions are available on the market, they cannot adequately handle all the sophisticated ploys that hide malicious human intent, and social engineering (Amankwa , Loock, & Kritzinger, 2014). Several studies have clearly stated that technical controls are not enough to mitigate the problem since humans are the weakest link in information security systems (AlMindeel & Martins, 2020; Stewart & Dawson, 2018; Wang , Zhu, & Sun, 2021). According to Flores and Ekstedt (2015), existing information security departments in organizations had significantly higher levels of employee awareness. Flores and Ekstedt (2015) also investigated organizational factors such as transformational leadership and information security culture and found a strong link between transformational leadership and attitudes toward social engineering defence. In terms of security training and awareness programs, several studies have confirmed that these contribute to mitigating social engineering dangers and raising employees' awareness (Carella , Kotsoev, & Truta , 2017; Flores , Holm , Svensson, & Ericsson, 2014). Regarding countermeasures factors, (Shahbaznezhad et al., 2021) investigated the effect of procedural, detective and protective countermeasures within organizations and found that preventive and detective countermeasures positively affect the ability to handle social engineering attacks. Another important factor is procedural countermeasures, which refer to information security policy guidelines and rules established by organizations. (Warkentin et al., 2016) found that procedural factors significantly affect employees' ability to handle social engineering attacks. However, it could be argued that procedural countermeasures are insufficient to produce a behavioral change in employees regarding phishing emails, as these policies should be embedded within employees' training programs (Shahbaznezhad et al., 2021). Other studies agree that a well-designed security policy can reduce security threats (Flores & Ekstedt, 2016; Safa , Von Solms, & Furnell, 2016; Simonet & Teufel, 2019).

Building on these findings, the primary objective of this study is to identify and analyze the key organizational factors that contribute to enhancing an organization's resilience to social engineering attacks, specifically within Saudi Arabian enterprises. This research aims to explore the collective role of factors such as leadership, security training, countermeasures, and organizational culture, examining how they interact and work together to strengthen defenses against social engineering threats. By investigating these critical factors, the study seeks to identify which elements are most influential in building resilience and to understand how their integration can improve an organization's ability to withstand social engineering attacks.

4. Methodology

This study adopted a mixed-method approach, specifically an explanatory sequential design, combining quantitative and qualitative methods. In the first phase, a quantitative survey was conducted using Qualtrics, a widely used online survey platform, to collect data from security specialists in Saudi Arabia. Participants were invited via a distributed survey link. The survey measured the impact of five key organizational factors transformational leadership, security training and awareness programs, information security culture, organizational preparedness, and technological safeguards on resilience against social engineering attacks. Participants were asked to assess the significance of each factor in mitigating risks and protecting their organization against social engineering threats. By gathering insights from professionals with direct experience in cyber security, the survey sought to identify those organizational factors that are most likely to build strong defenses. The data collected from the survey provided a comprehensive understanding of how these factors operate in real-world scenarios, and contributed to refining a model for strengthening organizational resilience to social engineering. In the second phase, qualitative insights were gathered through open-ended interviews to provide deeper context to the quantitative findings. However, this paper focuses solely on the quantitative phase, and the qualitative results will be explored in future research.

4.1 Survey Design

The online survey was designed using the Qualtrics XM platform, incorporating a diverse range of questions to gather comprehensive insights on the proposed SEAMC-SA framework. To ensure relevant expertise, a purposive sampling technique was employed, targeting security specialists from various Saudi companies. Participants were required to work in information security, security management, or cybersecurity-related roles. The survey was distributed through professional networks, industry groups, and direct invitations to security teams within selected organizations. Furthermore, to maximize reach, the questionnaire was distributed through social networking platforms such as LinkedIn, WhatsApp, and Telegram Messenger. Additionally, a snowball sampling approach was applied, encouraging participants to share the survey link within their professional networks. This method facilitated broader participation, ensuring a more diverse and representative dataset. Participants recorded their degree of agreement with each statement on a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. This scale was chosen as it is a widely-used instrument in surveys, is familiar to participants, and is suitable for eliciting opinions and attitudes, as highlighted by Passmore et al. (2002). A pilot study was conducted using Qualtrics XM with 10 participants, including university tutors and security experts. Their feedback helped refine the survey's clarity, relevance, and question flow. Following these refinements, the final survey was distributed over a two-month period, generating a substantial dataset for analysis.

4.2 Data Analysis

This study gathered survey responses from security specialists to analyze key organizational factors influencing resilience against social engineering attacks. The required sample size was calculated as 384, based on the total number of employees in selected companies in Saudi Arabia. A total of 715 security specialists participated in the online survey. After data collection, 390 valid responses were retained for analysis, yielding a 54% response rate, while 325 incomplete or invalid responses were discarded. Table 1 provides an overview of the participants' demographics and professional backgrounds.

Table 1. Survey participants' demographics

Demographic items	*Categories*	*Frequency*	*Percentage*
Gender	Male	245	62.8%
	Female	145	37.02%
	Total	390	100%
Age	18-25	64	16.41
	26-30	114	29.23
	31-35	83	21.28
	36-40	79	20.26
	above 40	50	12.82
	Total	390	100%
Highest education level	Bachelor degree	200	51.28%
	Post graduate diploma	9	2.31%
	Master degree	135	34.62%
	PhD	38	9.74%
	others	8	2.05%
	Total	390	100%
Years in the current job	Less than one year	49	12.56%
	1-5 years	152	38.97%
	6-10 years	73	18.72%
	11-15 years	50	12.82%
	More than 15	66	16.92%
	Total	390	100%

4.3 EFA Analysis of the Survey Data

Exploratory Factor Analysis (EFA) was conducted to identify the underlying organizational factors influencing social engineering awareness within Saudi companies. EFA is a statistical technique used to explore and reduce a broad set of variables into core components that represent key organizational dimensions. This method is particularly useful when the underlying structure is unknown, as it allows for the identification of latent constructs without pre-existing hypotheses (Watkins, 2018). Conversely, Confirmatory Factor Analysis (CFA) is used to test and validate a predefined theoretical structure by confirming whether measured variables align with expected factor groupings (DeCoster, 1998). Since this study aims to reduce the number of factors and retain only the most crucial ones, EFA, rather than CFA, is the more suitable analytical technique for this study.

Table 2 gives a summary of the five-step EFA protocol followed in this study. It outlines the key procedures followed: assessing data suitability, selecting the factor extraction method, determining the number of factors through eigenvalues and scree tests, applying Varimax rotation, and interpreting the factors based on loadings and communalities. This structured approach ensured a rigorous analysis, with internal consistency confirmed by Cronbach's alpha values exceeding 0.7, indicating the reliability of the extracted factors.

Table 2. Summary of the five-step EFA protocol

Step	Values
Data suitability assessment	Sample size = 384
	Item correlations > 0.30
	KMO ≥ 0.70
	Bartlett's test (Sig < 0.05)
Method for determining factor extraction	PCA
Extraction of factors	Eigenvalues > 1
	Cumulative Percentage of Variance 50% or greater
	Scree test
Rotational Method	Orthogonal Varimax
Interpretation	Factor loadings > 0.60
	Communalities ≥ 0.40
	Cronbach α > 0.7

Before running EFA, key assumptions were assessed to ensure the data's suitability. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated. As shown in Table 3, the Kaiser-Meyer-Olkin (KMO) score of 0.955 (superb) confirming that the dataset was appropriate for factor analysis. According to (Sofroniou & Hutcheson, 1999) KMO statistics range from 0 to 1, with values between 0.5 and 0.7 considered mediocre, 0.7 and 0.8 deemed good, 0.8 and 0.9 considered great, and values exceeding 0.9 regarded as superb.

Bartlett's Test of Sphericity was also significant ($\chi 2$ = 9707.051, df = 435, p < .000) indicating sufficient correlations among the variables for meaningful factor extraction, as shown in Table 4. Hence, this factor was deemed suitable for factor analysis. Bartlett's test is suitable when it produces a significant result (sig<. 05), as recommended by (Tabachnick et al., 2013).

Furthermore, the reliability of the organizational factors in the study was confirmed through the calculation of Cronbach's alpha, which yielded a high value of 0.965 for all items. This indicates a strong internal consistency across the questionnaire items, meaning that the responses were highly correlated and consistently measured the intended constructs. A Cronbach's alpha value closer to 1.0 suggests excellent reliability, and in this case, the 0.965 value demonstrates that the survey items provided a dependable measure of organizational factors related to social engineering awareness. This level of reliability is crucial for ensuring that the findings and conclusions drawn from the data are valid and trustworthy. According to (George & Mallery, 2003), values between 0.5 and 0.6 are considered poor, 0.6 to 0.7 are questionable, 0.7 to 0.8 are acceptable, 0.8 to 0.9 are good, and values exceeding 0.9 are excellent.

Principal Component Analysis (PCA) with varimax rotation was applied to extract the factors, ensuring clear differentiation between the components. Multiple criteria were used to determine the number of factors retained, including Kaiser's criterion (eigenvalue > 1), and cumulative variance explained. Variables with factor loadings below 0.60 were excluded to ensure the reliability of the factors, as shown in Table 5.

For the "Organizational" factor, the researcher initially applied the eigenvalue >1 criterion for factor extraction. However, due to ambiguous results, the decision was made to use a fixed number of factors instead. Based on this approach, four factors were extracted, explaining 22.030%, 17.418%, 14.724%, and 13.870% of the total variance, respectively. Together, these factors accounted for 68.041% of the total variance, as shown in Table 4. This percentage indicates a strong representation of the data, as it captures a significant portion of the variance, suggesting that the selected factors effectively represent the underlying organizational dimensions influencing social engineering awareness. The Cumulative Percentage of Variance method suggests that capturing 50% to 60% of the total variance is considered acceptable in social sciences research (Hair , 2009; Williams et al., 2010), which supports the adequacy of the 68.041% variance explained in this study. Additionally, as shown in Table 5 all four factors demonstrated internal consistency reliability exceeding .884, considered a 'good value' according to (George & Mallery, 2003).

Table 3 Table 4. KMO and Bartlett's Test results

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.955	
Bartlett's Test of Sphericity	Approx. Chi-Square	9707.051
	df	435
	Sig.	.000

Table 4. Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.442	51.474	51.474	15.442	51.474	51.474	6.609	22.030	22.030
2	2.055	6.852	58.325	2.055	6.852	58.325	5.225	17.418	39.447
3	1.763	5.877	64.203	1.763	5.877	64.203	4.417	14.724	54.171
4	1.152	3.839	68.041	1.152	3.839	68.041	4.161	13.870	68.041
Extraction Method: Principal Component Analysis									

Table 5 . Results of EFA analysis of "Organizational" factor

	Rotated Component Matrix[a]				
	Component				
	1	2	3	4	Communalities
Educate employees about the reporting of social engineering incidents.	.790				0.775
Educate employees about their online security responsibilities.	.759				0.729
Conduct regular security-awareness assessments.	.758				0.71
Customize training programs according to each employee's needs and role.	.755				0.699
Promote security culture among its employees.	.701				0.693
Use interactive and engaging training.	.685				0.642
Inculcate the belief that information security is the collective responsibility of everyone in the organization.	.664				0.669
Provide regular training on social engineering attacks prevention.	.658				0.679
Instils a shared and vision to protect information assets from unauthorized access.	.638				0.684
Fosters a positive and collaborative relationship between colleagues and other members of the organization.	.618	.			0.595
Implement systems for monitoring network and system.		.733			0.699
Secure systems even if employees fall victim to phishing emails.		.690			0.673
Regularly review and monitor network logs for suspicious activity.		.656			0.668
Regularly audit to identify weaknesses in preventive security controls.		.656			0.746
Use technology to block suspicious messages.		.640			0.585
Implement user activity monitoring tools.		.633			0.566
Protect network and computers with preventive security controls.		.631			0.695
Conducts periodic audits to identify weakness in detective security controls					0.649
Regularly update security policies based on latest threats.			.712		0.716
Set requirements for password management.			.709		0.681
Establish a plan for responding to security incidents.			.690		0.678
Establish security policies.			.670		0.653
Establish rules for mobile device usage.			.654		0.664
Address the physical security of facilities to prevent unauthorized access.					0.603
Mandate encryption for sensitive data.					0.555
Communicates to employees the purpose of information security initiatives.				.836	0.745
Emphasizes the importance of collective effort in ensuring information security.				.800	0.782
Demonstrates knowledge and proficiency in regard to information security.				.794	0.751
Encourages communication and cooperation to ensure effective information security.				.735	0.743
Describes information security as a function that supports business and assets.				.730	0.685
Alpha	.944	.906	.884	.906	
Cronbach's Alpha for the Organizational factor	.965				

5. Results/Findings

The results revealed several key organizational factors that contribute to social engineering awareness, as illustrated in Table 6. Each factor was labeled based on the variables with the highest loadings, reflecting critical dimensions such as leadership, policy enforcement, training, and communication. These factors were then interpreted and further analyzed in subsequent sections to determine their influence on social engineering risks within companies in Saudi Arabia.
The factor analysis results for the "Organizational" factor revealed four sub-factors: "Organizational Preparedness", "Security Policy", "Technological Safeguards", and "Transformational Leadership". As shown in Table 6, two factors Security Training and Awareness Programs and Information Security Culture were merged and named "Organizational Preparedness". Similarly, Preventive and Detective Countermeasures were combined under the label "Technological Safeguards", while Procedural Countermeasures were renamed "Security Policy".

Table 6 Sub-factor labels for "Organizational" factor

Organizational		
Items	New Sub-Factor	Alpha
Educate employees about the reporting of social engineering incidents	Organizational Preparedness	.944
Educate employees about their online security responsibilities		
Conduct regular security-awareness assessments		
Customize training programs according to each employee's needs and role		
Promote security culture among its employees		
Use interactive and engaging training		
Inculcate the belief that information security is the collective responsibility of everyone in the organization		
Provide regular training on social engineering attacks prevention		
Instils a shared and vision to protect information assets from unauthorized access		
Fosters a positive and collaborative relationship between colleagues and other members of the organization		
Implement systems for monitoring network and system	Technological Safeguards	.906
Secure systems even if employees fall victim to phishing emails		
Regularly review and monitor network logs for suspicious activity		
Regularly audit to identify weaknesses in preventive security controls		
Use technology to block suspicious messages		
Implement user activity monitoring tools		
Regularly update security policies based on latest threats	Security Policy	.884
Set requirements for password management		
Establish a plan for responding to security incidents		
Establish security policies		
Establish rules for mobile device usage		
Communicates to employees the purpose of information security initiatives	Transformational Leadership	.906
Emphasizes the importance of collective effort in ensuring information security		
Demonstrates knowledge and proficiency in regard to information security		
Encourages communication and cooperation to ensure effective information security		
Describes information security as a function that supports business and assets		

6. Discussion

Organizational factors significantly strengthen an organization's resilience to social engineering attacks by addressing both the human and technical dimensions of security. The factor analysis yielded four key sub-factors: Organizational Preparedness, Security Policy, Technological Safeguards and Transformational Leadership. Together, these constitute a comprehensive defense strategy that shields the organization from the multifaceted nature of social engineering threats.

6.1 Organizational Preparedness

This factor integrates Security Training and Awareness Programs with Information Security Culture, highlighting their combined role in fostering social engineering awareness. As shown in Table 5, statements such as *"Educate employees about the reporting of social engineering incidents"* (0.790) and *"Conduct regular security-awareness assessments"* (0.758) indicate the importance of structured training initiatives. Similarly, *"Promote security culture among employees"* (0.701) and *"Inculcate the belief that information security is the collective responsibility of everyone in the organization"* (0.664) emphasize the cultural aspect of security preparedness. Regular and effective training ensures that employees are aware of the latest social engineering tactics, such as phishing, baiting, or pretexting, which often exploit human weaknesses like trust or ignorance. By establishing a security-first mindset, organizations can reduce the likelihood of employees unknowingly falling prey to these tactics. Furthermore, an ingrained security culture encourages continuous vigilance and accountability, making security not just a set of policies but a core organizational value.
Employees who are well-trained and aware of security risks are more likely to follow best practices, such as verifying the identity of individuals requesting sensitive information and reporting suspicious activities. As shown by the factor loadings, fostering a shared security vision (0.638) and a collaborative relationship among employees (0.618) further strengthen the organization's ability to resist social engineering threats. By continuously reinforcing awareness programs and cultivating a strong security culture**,** organizations enhance employee preparedness**,** making them the first line of defense against manipulation tactics**.**

6.2 Security Policy

A clear and comprehensive security policy provides a formal framework that guides employee behavior and sets expectations for maintaining security standards. The presence of well-documented policies helps reduce ambiguity, ensuring that employees know exactly what actions to take in different situations, including handling sensitive information and responding to potential social engineering attempts.
As shown in Table 5 the results of the factor analysis emphasize the critical role of policy-related measures in enhancing organizational security. For instance, regularly updating security policies based on the latest threats had a high factor loading (0.712), highlighting its importance in maintaining an adaptive and resilient security posture. Additionally, establishing a structured plan for responding to security incidents (0.690) ensures that organizations can act swiftly and effectively when faced with security breaches, minimizing potential damage. Moreover, a well-defined security policy extends beyond digital measures to include rules for mobile device usage (0.654), ensuring that employees follow standardized security practices when accessing company systems remotely. Physical security considerations, such as securing organizational facilities against unauthorized access, also play a role in overall security preparedness (0.603). By incorporating these structured policies, organizations can reduce inconsistencies in employee responses to threats, mitigate risks associated with social engineering attacks, and foster a culture of adherence to best security practices.

6.3 Technological Safeguards

Technological measures, grouped under Preventive Countermeasures and Detective Countermeasures**,** provide a critical layer of protection that complements the human element. Preventive Countermeasures include security technologies like firewalls, intrusion detection systems, and anti-phishing tools that block or mitigate social engineering attacks before they reach employees. Detective Countermeasures involve monitoring and surveillance tools that help detect anomalies, such as unauthorized access or unusual activity, which may indicate a social engineering attempt.
As shown in Table 5 the factor analysis results highlight the significance of various technological safeguards in strengthening organizational resilience. The highest factor loading in this category was found for implementing systems for monitoring networks and systems (0.733), emphasizing the importance of

continuous surveillance to detect threats early. Additionally, securing systems even if employees fall victim to phishing emails (0.690) serves as a critical backup to human error, ensuring that a single mistake does not compromise the entire organization. Other key technological defenses include regularly reviewing and monitoring network logs for suspicious activity (0.656) and conducting periodic audits to identify weaknesses in preventive security controls (0.656), which help organizations assess and improve their security posture. Furthermore, using technology to block suspicious messages (0.640) and implementing user activity monitoring tools **(**0.633**)** provide additional layers of defense against cyber threats. By reinforcing the human side of security with strong technical defenses, organizations create a resilient security posture that reduces the likelihood of social engineering attacks and ensures early detection and mitigation of threats.

6.4. Transformational Leadership

Transformational Leadership strengthens organizational resilience by driving a security-oriented culture from the top down. Leaders who prioritize security and actively communicate its importance ensure that employees understand that security is a shared responsibility, not just the concern of the IT or security departments. Leadership plays a pivotal role in fostering collaboration across departments, encouraging openness about reporting security incidents, and promoting continuous learning in response to new threats.

As shown in Table 5 the factor analysis results reinforce the importance of leadership in promoting security awareness and engagement. The highest factor loading in this category was found for "Communicates to employees the purpose of information security initiatives" (0.836), indicating that clear messaging from leadership is crucial for fostering a security-conscious culture. Similarly, "Emphasizes the importance of collective effort in ensuring information security" (0.800) underscores the need for leaders to instil a sense of shared responsibility among employees. Additionally, demonstrating knowledge and proficiency in information security (0.794) is a key leadership trait that builds trust and credibility, motivating employees to take security protocols seriously. Encouraging communication and cooperation to ensure effective information security (0.735) fosters an environment where employees feel comfortable discussing security concerns. Lastly, describing information security as a function that supports business and assets (0.730) highlights the role of leadership in aligning security initiatives with broader organizational goals.
When leaders consistently emphasize the importance of protecting the organization from social engineering attacks, they cultivate an empowered and proactive workforce that takes security seriously, reports incidents promptly, and actively contributes to a stronger organizational defense strategy.

Collectively, these organizational factors not only address immediate threats but also establish a long-term, sustainable defense strategy by combining preventive, detective, and corrective measures. By integrating human, technical, and leadership elements into a cohesive framework, organizations significantly improve their ability to resist, detect, and respond to social engineering attacks, ultimately strengthening their overall resilience to such threats. This multi-dimensional approach ensures that both employees and systems are well-prepared, resulting in a holistic defense mechanism capable of adapting to the evolving landscape of social engineering techniques.

7. Conclusion

This study explored the organizational factors that collectively strengthen resilience to social engineering attacks, focusing on companies in Saudi Arabia. Using Exploratory Factor Analysis (EFA), four key sub-factors were identified: Organizational Preparedness, Security Policy, Technological Safeguards, and Transformational Leadership. These factors contribute to strengthening an organization's ability to defend itself against social engineering by fostering a robust security culture, implementing comprehensive policies, and deploying effective technological measures. The findings highlight the importance of integrating these elements to create a well-rounded security framework that not only safeguards information but also promotes employee engagement and awareness.
However, this research has several limitations. The focus on Saudi companies may limit the generalizability of the findings to other regions or sectors. Self-reported data, which could be prone to biases, is another constraint. While the sample size was adequate, a larger sample might offer more reliable insights and reduce sampling errors. To build upon this study, future research should include a broader range of organizations in different countries and various industries to provide a more comprehensive understanding of how organizational factors influence resilience to social engineering. A longitudinal study could track how these factors evolve in response to security threats emerging over time.

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Role Of Organizational Ethos In Determining Organizational Citizenship Behaviour

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Abstract: *This research aims (a) to study the dynamics of organisational citizenship behaviour and organisational ethos across types of organisations (service & manufacturing), hierarchical positions (executive & non-executive) and gender (male & female) of the employees, (b) to examine the functional relationship among organisational citizenship behaviour and organisational ethos and (c) to ascertain the relative importance of organizational ethos and its eight dimensions in determining organisational citizenship behaviour. It follows a 2x2x2 factorial design. Two standardised questionnaires namely, Organisational Citizenship Behaviour and Organisational Ethos have been used to collect the data. The sample size is 600 divided into eight groups. Each group comprises of 75 participants. The statistics used are descriptive analysis, ANOVA, correlation and step wise multiple regression analysis to analyse the data and interpret the results. The study has thrown many interesting results. The major findings are: there is a significant difference between manufacturing and service sector on organisational citizenship behaviour, organisational ethos. Manufacturing sector has better organisational culture in terms of openness, autonomy, collaboration and experimentation whereas service sector has high organisational citizenship behaviour. There is also significant difference across executive and non-executive, male and female, which are discussed in detail. Further, the result shows that confrontation and pro-action are influencing organisational citizenship behaviour significantly. Based on the findings, organisational development and behavioural development interventions are suggested to increase the performance in the organisation.*
Keywords*: Organisational Citizenship Behaviour, Organisational Ethos, Services, Manufacturing, Organisation Development*

Introduction

In intelligent organizations, behaviour plays a crucial role as they develop and provide innovative solutions to meet customer needs, leveraging expertise. Therefore, the culturally influenced development of behaviour is essential for fostering new core competencies that are necessary to gain a competitive advantage. One way to develop behavioural categories is to go by the reasons that behavioural episodes either contribute to or detract from organisational goal accomplishment. Work habits are patterns of behaviour that people learn over time and that can either facilitate or interfere with the performance of behaviours that contribute to the accomplishment of organisational goals.

This is just not the compliance of job description drawn in the organisation rather it has been observed that people sometimes do perform more than what they are expected to do, which ultimately helps the organisations to enhance productivity. This behaviour has been captured by the concept of organisational citizenship behaviour (OCB). OCB research attempts to discover what makes employees engage in citizenship behaviours and how this can be used within the organisation to enhance productivity. OCB is partly a function of the extent to which employees feel supported by the organisation and have good relationship with their immediate supervisors and not performed only for impression management (Jardine & Bagraim, 2000).

In 1983, Denis Organ and his colleagues first coined the term "Organisational Citizenship Behaviour (OCB) (Bateman & Organ, 1983; Smith, Organ & Near, 1983). Then drawing on the concept of "willingness to co-operate" Chester Bernard (Bernard, 1938) and Daniel Katz's distinction between dependable role performance and innovative and spontaneous behaviours, Organ (1988:4) defined the term OCB as *individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system, and that in the aggregate promotes the effective performance of the organisation. By discretionary we mean that the behaviour is not an enforceable requirement of the role or job description, that is, the clearly specifiable terms of the person's employment contract with the organisation; the behaviour is rather a matter of personal choice, such that its omission is not generally understood as punishment*. This concept has also been characterised as constructive and co-operative extra role gestures that are neither mandatory nor directly compensated by a formal organisational reward system. In addition such behaviours have been described as having an accumulative positive effect on organisational functioning (Organ, 1988, 1990).

OCB is a long-term behaviour that typically involves proactive efforts to benefit others, and takes place in an organisational setting. The fact that OCB is a voluntary, extra-role behaviour, does not mean that it goes unnoticed and unappreciated by an organisation's leaders, that it has no impact on formal and informal evaluations of an employee's performance, or even that people are unaware of the benefits that might result from being a good organisational citizen. To the contrary, there is evidence that OCB is noticed, does affect evaluations and that workers know this (Allen, 1996; Borman, White & Dorsey, 1995; Motowidlo & Van Scotter, 1994).

Organisational culture, philosophy and practices always drive the people towards greater height of performance. Organisational culture/ethos is the underlying spirit or character of an organisation and made up of its beliefs, customs or practices. It includes, among other things the values, beliefs and behavioural norms and expectations shared by an organisation's members (Schein, 1990). As components of organisational culture, behavioural expectations can be characterised as shared and enduring phenomenon that influence the thinking and behaviour of organisational members. These cultural norms are also hypothesised to influence organisational members' motivation, performance, satisfaction & stress levels (Cooke & Szumal, 1993).

Corporate culture means, "*the way things are done around the organisation*" (Deal & Kennedy, 1982). Culture is comprised of the symbolic side of an organisation, and it shapes the human thought and behaviour in the system. It consists of the system of shared values and beliefs that interact with the organisation's people. Values, which are the core of the work culture, serve as standard and motivation to strive for something. When the members of an organisation share an enduring belief or a preferred mode of conduct or way of existence, a characteristic culture is evolved. Corporate culture is the *implicit, invisible, intrinsic and informal* consciousness of the organisation, which guides the behaviour of the individuals and at the same time, shapes itself out of their behaviour (Scholz, 1987).

One of the most widely cited hypotheses is that a strong culture enables an organisation to achieve excellent performance. Deal & Kennedy (1982), for example, have argued that 'the impact of a strong culture on productivity is amazing. In the extreme, we estimate that a company can gain as much as one or two hours of productive work per employee per day'. Strong is usually used as a synonym for consistency. Consistency, though, can be a double-edged sword. There are two main points that can be noted here. *First*, whether these value-based principles do in fact enhance performance largely depends on whether they are appropriate to the business environment; and *second*, where there is inconsistency between the espoused culture and the culture-in-practice, integration and coordination within the organisation may tend to break down. Given the apparent plausibility of the 'strong culture equals high performance' equation, it is not surprising to find that many enterprising managers subscribe to it (Peters & Waterman, 1982; Pascale & Athos, 1981; Deal & Kennedy, 1982; Sokro, 2012).

Rationale Of The Study

In the twenty-first century, the service organisations are growing by opening a new vista of business. These organisations are different than the conventional manufacturing organisations in terms of business dynamics, organisational structure and processes. Moreover, the women population in the organisation is also growing day by day and creating a different psycho-dynamics at work. Hence, it is imperative to understand the organisational ethos and OCB in service and manufacturing organisations to develop a better Organisation Development intervention.

Van Dyne, Graham & Dienesch (1994) have viewed that the future research should examine when and under what conditions particular forms of organisational citizenship behaviour occur. Moreover, the implications of the multi-dimensionality of organisational citizenship behaviour may also be explored. The actors like personality difference, structural constraints, incentives and recognition, supervisory style and organisational culture may influence OCB, which needs to be studied. Another limitation of research on OCB is that it has neglected specific organisational practices and organisational culture, which may elicit citizenship behaviours (Morrison, 1996).

Objectives

The objectives of the present study are:
1. To study the dynamics of organisational citizenship behaviour, organisational ethos across types of organisations (service & manufacturing), hierarchical positions (executive & non-executive) and gender (male & female) of the employees.
2. To examine the functional relationship among organisational citizenship behaviour, and organisational ethos.
3. To ascertain the relative importance of eight dimensions of organizational ethos in determining organisational citizenship behaviour.

Hypotheses

The hypotheses drawn on the basis of the above objectives are as follows:
1. Organisational Citizenship Behaviour and Organisational Ethos would be higher in-service organisation in comparison to the manufacturing sector.
2. Executives would perceive higher Organisational Citizenship Behaviour and Organisational Ethos in comparison to the non-executives.
3. Male employees would have more Organisational Citizenship Behaviour and Organisational Ethos in comparison to their female colleagues.
4. Organisational Ethos will significantly determine Organisational Citizenship Behaviour.

Design - The present study is a 2x2x2 factorial design of research. There are three independent variables, namely, types of organisations (service & manufacturing), hierarchical positions (executives & non-executives) and gender of the employees (male & female). The dependent variables are organisational citizenship behaviour & organisational ethos.

Sample - The sample consists of 600 employees drawn randomly from ten organisations, out of which five are manufacturing and the rest five are from service sector as per the research design. Thus, there are eight sub-groups namely, manufacturing male executives, manufacturing female executives, manufacturing male non-executives, manufacturing female non-executives, service male executives, service female executives, service male non-executives and service female non-executives. The organisations covered under manufacturing sector are Bharat Electronics Limited (BEL), Dabur India Limited, Nestle India, Hindustan Aeronautics Limited (HAL), Grasim Industries Limited (Staple Fibre) and under service sector are Bank of India, Credit Rating Information Service of India Limited (CRISIL), Life Insurance Corporation (LIC) of India, Infosys Technologies Limited.

Tools – Two tools namely, Citizenship Behaviour scale, and Organisational Ethos scale, have been used to measure the dependent variables. They are

- Organisational Citizenship Behaviour Scale (Linn Van Dyne, Jill W. Graham & Richard M. Dienesch in 1994)
- Organisational Ethos: OCTAPACE Profile (Udai Pareek in 1997)

Procedure - The data is collected from random sample as per the design of the study. Both the questionnaires were given to the respondents together in their natural work setting. The researcher visited all the organisations and called 20 – 25 people in a group to a conference room located in the organisation's premises. The instruction was given by the investigator to all the respondents regarding the method to be adopted for recording the responses. The doubts were cleared then and there by the investigator. The filled in questionnaires were collected and based on the data, the data sheets were prepared on each group. Further, the data were computed using SPSS package.

Discussions & Conclusion – In the changing environment, holding a particular position in terms of excellence is quite difficult unless the organisation tries to invent and re-invent the wheel. No single organisation is the best in terms of all the processes. It is essential to understand, appreciate and emulate the best practices of each organisation irrespective of the nature, type and geographical location of the business. Indian management needs to become pro-active in understanding the need of the hour, in benchmarking the best practices and in designing the performing organisations (Pattanayak, Gupta & Niranjana, 2002).

Dynamic people make an effective organisation. Dynamism can be created only when there is proper mechanism to develop competency and motivation to work (Routray, Mohanty & Mohanty, 2002). A macro approach to organisational effectiveness focuses generally on various issues such as profit and productivity and largely ignores individual and organisational effectiveness (Katz & Kahn, 1966).

The significant findings of the study are going to be discussed here in the light of the studies already carried out by other researchers.

The results of the present study show that the service sector employees show higher organizational citizenship behaviour in comparison to the employees of manufacturing sector (Table 1 & 2). Organizational citizenship behaviour here has taken into consideration three dimensions such as loyalty, obedience and participation. It is quite natural that the employees of the service organization have different orientation and attitude towards the work. As the whole focus is on service, they understand that the service they render is going to determine the business they are going to get. Moreover, their product is the service. It is obvious that only the defined role of the organization is not going to give them the desired mileage. Hence, may be the employees do exercise extra-role behaviour in the organization. The result of the study undertaken by Moorman and Blakely (1995) indicates that if an individual holds collectivistic values or norms, he/she would be more likely to perform citizenship behaviour. In addition, this relationship was found to be robust to common method effects and to the effect of the relationship between procedural justice and organizational citizenship behaviour. Moreover, their findings show that in service sector, the relationship between the collectivistic value and the organizational citizenship behaviour dimensions of interpersonal helping do exist. This supports the present findings.

On the other hand, in the manufacturing sector, the work procedures are well defined and are more or less codified. Moreover, by and large, the manufacturing organizations do have Standard Operating Practices (SOP) to execute the assignments. Hence, may be there is less scope to move beyond the defined role boundaries and behavioural expectations in the organization.

Further, the findings of the present study reveal that the gender of an employee (Table 1 & 2) plays an important role in determining organizational citizenship behaviour in the organization. Male employees do exhibit higher OCB in comparison to their female counterparts. It has been clearly seen in most of the organizational studies that females have multiple role relationships, which are equally important and which have to be played simultaneously. The pressure from home front is quite high. They do experience much higher stress than their male counterparts (Pattanayak & Mishra, 1997; Niranjana & Pattanayak, 2002). Through qualitative data during interaction with the respondents, it has been understood that because of the family expectations, females do feel constrained in exerting extra-role behaviour in the organization. It is of course possible that this situation is more prominent in the Indian context, where loyalty, participation and obedience of a female is more pronounced towards her family life than to her career and the organization she works with. Women's careers are more adversely affected by family demands than men's career (Sandelands, 2000). Most of the studies on organisational citizenship behaviour that did examine gender found it to be significant (Deluga, 1998; Lepine and Van Dyne, 1998; Morrison, 1994; Van Dyne and Ang, 1998).

With regard to the hierarchical position (Table 1 & 2), interestingly, the present research finding shows that OCB is not the function of the position the individual occupies in the organizational hierarchy of executives and non-executives. This implies that reflections of organizational citizenship behaviour by the employees are more of an individual attribute, may be influenced by the type of the organisations they work and also their individual gender than the positions they occupy. It is a healthy sign in the organization that irrespective of the positions the employees occupy, they do get involved in organizational citizenship behaviour in a similar fashion.

Table 1. Mean & Standard Deviation of all the variables

Variables		Manufacturing				Service			
		Executive		Non-executive		Executive		Non-executive	
		Male	Female	Male	Female	Male	Female	Male	Female
OCB	Mean	152.507	148.293	149.147	150.053	157.733	154.000	164.080	155.147
	SD	16.062	13.819	18.317	19.298	22.647	27.041	19.327	22.525
Loyalty	Mean	48.027	48.120	52.560	50.640	55.040	53.213	54.920	51.867
	SD	7.489	7.398	7.897	9.213	7.911	10.491	8.833	8.754
Obedience	Mean	55.400	53.587	52.507	53.133	56.227	54.547	60.493	57.107
	SD	10.124	7.193	8.987	9.447	10.579	11.795	7.706	9.350
Participation	Mean	49.080	46.467	44.000	46.160	46.333	46.053	48.667	46.213
	SD	5.999	6.737	7.187	7.612	8.737	8.967	8.518	9.030
Organizational Ethos	Mean	113.933	114.400	112.160	110.600	106.133	107.120	112.960	110.893
	SD	11.598	17.299	12.052	12.839	17.087	14.225	10.368	12.405
Openness	Mean	14.960	15.053	15.453	14.907	13.907	13.893	15.347	14.653
	SD	2.826	3.246	2.747	2.707	3.167	2.638	2.245	2.778
Confrontation	Mean	13.653	14.120	13.813	13.880	13.147	13.427	14.493	13.467
	SD	1.990	3.009	2.793	2.466	2.720	2.900	2.214	2.440
Trust	Mean	14.693	14.413	13.693	14.333	13.813	14.053	13.920	14.307
	SD	2.150	2.761	1.889	2.468	2.832	2.493	2.294	2.307
Authenticity	Mean	12.613	13.413	12.147	11.800	11.747	12.120	12.187	12.813
	SD	3.136	2.372	2.497	2.034	2.466	2.444	1.557	1.698
Pro-action	Mean	15.760	15.493	15.240	14.467	14.320	14.307	15.787	15.040
	SD	2.546	3.281	3.440	3.159	3.059	3.192	2.506	2.835
Autonomy	Mean	12.600	13.027	12.640	13.453	11.907	12.373	12.573	12.600
	SD	2.520	2.066	2.294	2.292	2.126	1.769	1.787	2.212
Collaboration	Mean	15.160	14.867	14.613	14.080	14.000	13.760	14.680	14.480
	SD	1.925	2.440	2.241	2.235	2.706	2.370	1.499	2.268
Experimentati on	Mean	14.493	14.013	14.560	13.680	13.213	13.027	13.947	16.533
	SD	2.029	3.002	2.384	2.692	2.839	2.020	1.793	2.333

Table 2. Analysis of Variance of all the variables

Source		A	B	C	AxB	AxC	BxC	AxBxC
V1	OCB	21.905**	0.794	5.831*	1.890	2.002	0.000	2.434
V2	Loyalty	31.556**	3.999*	5.763*	9.301*	1.195	1.345	0.079
V3	Obedience	19.602**	1.258	4.062*	10.750**	1.564	0.056	1.786
V4	Participation	0.364	1.251	1.518	9.281**	0.777	1.010	7.212**
V5	Organisational Ethos	9.784**	1.264	0.236	13.083**	0.000	1.291	0.053
V6	Openness	7.865**	7.703**	1.598	4.079*	0.076	2.069	0.002
V7	Confrontation	1.220	2.391	0.064	3.012	2.294	4.079**	1.151
V8	Trust	1.736	0.832	1.563	3.329	0.114	1.826	0.960
V9	Authenticity	2.127	1.556	3.668	17.929**	0.519	1.386	3.403
V10	Pro-action	2.335	0.439	3.332	14.437**	0.081	1.581	0.053
V11	Autonomy	10.452**	3.763	6.112*	0.370	1.134	0.006	1.390
V12	Collaboration	6.073*	0.008	3.008	14.005**	0.280	0.075	0.147
V13	Experimentation	14.662**	1.516	6.149*	3.633	0.924	0.629	0.048

Another healthy finding is that the employees do participate in the organizational activities irrespective of their organization, the position they occupy and gender. This is quite understandable as in the post liberalized scenario, in all the organizations, paramount importance is being given on people participation in organizational functioning.

In the present study, it has been found that manufacturing organizations have better organizational ethos than the service organizations. The organizational ethos has been operationally defined here in terms of openness, confrontation, trust, authority, pro-action, autonomy, collaboration and experimentation. The organizational ethos is mostly organization specific driven by the people in the organization. In this context, the culture reflected by the manufacturing sector is the reflection of the organizational culture that prevails in the organizations under study.

Manufacturing being research and development driven, it may be explained that it fosters more openness, autonomy, experimentation and collaboration as part of the work culture, whereas both service and manufacturing do not differentiate on confrontation, trust, authenticity and pro-action.

The findings also reflect that employees do not differentiate in perception of organisational ethos in terms of their positions occupied in the hierarchy and also the gender (table 1 & 2). Srivastava (2000) in his recent study has shown that managers of manufacturing sector (i.e., people at the higher echelons of the hierarchy) perceived high positive work culture in comparison to executives and supervisors (who were at the lower ring of the pyramid). Interestingly, this does not come true in the present study when the manufacturing and service sectors are being compared. Moreover, the results also indicate that there is no impact of gender on the perception of organisational ethos. As the ethos is an organisational factor, it may not have any relationship with the individual gender. This also indicates that the organisations under study have their own unified work culture, which is so strong that people do perceive uniformly irrespective of their positions in the organisation & gender.

Indian studies have provided ample evidence that organisation, as the outcome of the process of socialisation, has to be adaptive to the environment (Srivastava, 2000). Sinha (1995) has looked at the sources of organisational culture in its socio-economic milieu. The evidence from literature supports this contention that similar work-related experiences result in uniformity of perception of cultural characteristics (Schein, 1987; Van Mannen, 1976).

It has also been found from the results of the present study that females do enjoy more autonomy and involve more in experimentation than their male counterparts. This may be due to the fact that females are engaged more in the area of research and development in corporations/manufacturing organisations. The non-executives are having high openness than the executives. This is quite natural because of the unionised work environment wherein non-executives have more freedom of expression than the executives.

Towards the second objective of the study (Table 3), an endeavour has been made to examine the relationship between organisational citizenship behaviour and organisational ethos.

The results show that organisational citizenship behaviour has positive relationship with organisational ethos. It shows that a positive work culture will influence organisational citizenship behaviour thereby developing loyalty, obedience and participation in the organisation. This lends support to the study of Kar and Tewari (1999), which has attempted to explore organisational ethos as an antecedent that in turn fosters citizenship behaviour according to which organisational culture is positively and significantly correlated with organisational citizenship behaviour. Stamper and Dyne (2001) in their study of 257 service employees have shown that preferred work status (an individual factor) and organisational culture (a contextual factor) would moderate the relationships between work status and citizenship behaviour. Though the sample in the present study has been taken from manufacturing and service employees, the findings here is strongly in line with the previous studies undertaken to understand the relationship. Further, it also indicates that irrespective of the types of organisations organisational citizenship behaviour is positively and significantly related to organisational ethos.

Towards the third objective of this study (Table 4) to ascertain the influence of organisational ethos and the dimensions of organisational ethos as independent variables to determine organisational citizenship behaviour as the dependent variable, the findings show that in case of total sample confrontation and pro-action are the most important and significant predictors of organisational citizenship behaviour. It implies that the culture of confrontation and pro-action are influencing the organisational citizenship behaviour of the employees. The finding is in the expected direction. In the organisation, the confrontative and pro-active work culture will definitely make the employees more loyal, obedient and participative. It is quite obvious that the individual who confronts the problems in the best interest of the organisation and also is pro-active will have higher organisational citizenship behaviour. Moreover, confrontation symbolises the active participation and interest of the individual in the organisational function. Hence, the cultural factors like confrontation and pro-action have positive impact on organisational citizenship behaviour. Organisations do need to create ethos like confrontation and pro-action in order to develop organisational citizenship behaviour. A study conducted by Hasyim & Tukiran (2024) also lends support to this.

Most of the hypotheses formulated in the present research paradigm have been accepted leading to interesting findings. However, this study has created ample scope for further research to explore the organisational dynamics in private, public and multinational companies.

Table 3. Inter-correlation among all variables – Total Sample (600)

		Sector	**Level**	**Sex**	**V (1)**	**V (2)**	**V (3)**	**V (4)**	**V (5)**	**V (6)**	**V (7)**	**V (8)**	**V (9)**	**V (10)**	**V (11)**	**V (12)**	**V (13)**
Sector		1.000															
Level		0.000	1.000														
Sex		0.000	0.000	1.000													
	V (1)	0.187	0.036	-0.096	1.000												
	V (2)	0.221*	0.079	-0.095	0.729**	1.000											
	V (3)	0.176	0.045	-0.080	0.831**	0.381**	1.000										
	V (4)	0.024	-0.045	-0.050	0.763**	0.313**	0.514**	1.000									
	V (5)	-0.126	0.045	-0.020	0.399**	0.187	0.337**	0.416**	1.000								
	V (6)	-0.113	0.112	-0.051	0.305**	0.135	0.258**	0.327**	0.819**	1.000							
	V (7)	-0.045	0.063	-0.010	0.356**	0.192	0.296**	0.351**	0.800**	0.657**	1.000						
	V (8)	-0.054	-0.037	0.051	0.256**	0.175	0.185	0.246*	0.706**	0.519**	0.529**	1.000					
	V (9)	-0.058	-0.050	0.077	0.187	0.086	0.149	0.206*	0.478**	0.245*	0.301**	0.222*	1.000				
	V (10)	-0.062	0.027	-0.074	0.427**	0.217*	0.396**	0.382**	0.806**	0.620**	0.610**	0.534**	0.309**	1.000			
	V (11)	-0.130	0.078	0.100	0.016	-0.071	0.025	0.086	0.285**	0.138	0.080	0.065	0.048	0.024	1.000		
	V (12)	-0.099	0.004	-0.070	0.256**	0.082	0.231*	0.287**	0.715**	0.528**	0.539**	0.411**	0.203*	0.554**	0.240*	1.000	
	V (13)	-0.154	0.049	-0.100	0.299**	0.143	0.235*	0.330**	0.773**	0.643**	0.557**	0.557**	0.287**	0.597**	0.106	0.448**	1.000

0.05 – 0.195, 0.01 – 0.256

Table 4. Results of Multiple Regression. (Forward Step-wise) Analysis for Predicting OCB for total sample

Variable	**Regression Co-efficient**	**F**	**p**	**R^2**
Confrontation (V8)	0.136	8.858	< 0.005	0.220
Pro-action (V11)	0.308	44.481	<0.001	

It is quite evident from the findings of the study that there is a distinct difference that does exist between service and manufacturing sectors, in terms of the organisational citizenship behaviour and work culture dynamics. This has necessitated developing OD intervention strategies in service sector to improve the cultural dimensions like openness, autonomy, collaboration and experimentation. For example, to be specific, suggestion schemes for employees, introduction of open house concept, introduction of delegation and empowerment processes can be used to improve the work culture. Both the OD initiative and behavioural intervention will increase the organisational citizenship behaviour and in turn, will improve the performance of the organisation. This is in line with the conceptual model of Organisational Effectiveness of Pattanayak (2002).

Conclusion

In the past decade, organizational competition has intensified, presenting significant challenges for survival. Many companies are finding it increasingly difficult to maintain their market positions, as reflected in the fluctuating fortunes of Fortune 500 companies, both in India and internationally.

This is high time that the Indian organisations should understand the culture specific organisational dynamics that determine the failure and success of the organisations. Pareek (1994) has rightly pointed out that culture provides a strong rim for a fast-moving wheel, which keeps several factors integrated and acts as a binding force to move in a difficult terrain. Sinha (1994) pointed out that the move to get out of the western mould, through indigenous organisational behaviour research in India, has taken three roots. The first is a religious-philosophical model of human beings who strive to relate by seeking purity and peace of mind, cultivating a sense of detachment and accenting work as a duty. The second one emphasises on the strategic role of the organisation in nation building. The third root yields to socio-economic and political compulsions and explores how people work in the organisation. These three approaches often overlap and taken together present a contrast to a western view of culture. However, there are instances of meaningful borrowings and blending, which help and entertain the possibility of a worthwhile programme on integrative indigenisation.

Contemporary research has devoted an increasing amount of attention to the consequences of organisational citizenship behaviour. The findings of the studies by several contemporary researchers have shown that there is a significant positive relationship of organisational citizenship behaviour with performance (MacKenzie & Podsakoff, 1991, 1993; Podsakoff, MacKenzie & Hui, 1993). It has been observed from the review of literature that organisational citizenship behaviour has substantial contribution for the increase in performance (Borman & Motowidlo, 1993; George & Bettenhausen, 1991; Karambayya, 1990; MacKenzie et. al., 1991, 1993; Organ, 1988, 1990; Podsakoff & MacKenzie, 1994; Podsakoff, MacKenzie & Hui, 1993; Smith et al., 1983; Niranjana & Pattanayak, 2005; Iqbal, Qamari & Surwanti, 2024).

Thus, it is essential to increase the organisational citizenship behaviour to improve performance in the organisation as it has been proved that organisational ethos is positively influencing organisational citizenship behaviour. Organisations should initiate proper human resource intervention techniques to develop a performance-oriented work culture. Specific OD initiatives should be developed for manufacturing and service organisations taking into consideration the specific dynamics as highlighted in the findings. Service organisations should take more initiative in developing better work culture to maximise the customer satisfaction and also to attract and retain the best customers. Training programmes and action research should be undertaken by sector specific different organisations to develop employees on these attributes and also organisations in creating a healthy work culture, which would be more vibrant, competitive, performance oriented and environment sensitive.

Thus, to conclude "it is not the organisation, which makes the difference; it is the people in the organisations who really make the difference".

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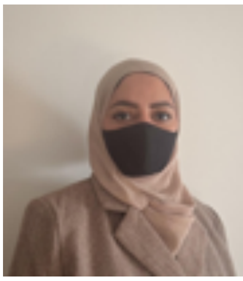

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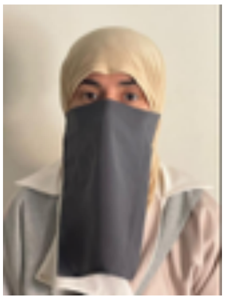
Dr. Tomayess Issa Is a Senior Lecturer at the Faculty of Business and Law - Curtin University/Australia. Tomayess completed her doctoral research in Web development and Human Factors. As an academic, she is also interested in establishing teaching methods and styles to enhance the students' learning experiences and resolve problems that students face. Currently, she conducts research locally and globally in Human-Computer Interaction, Usability, Social Networking, Sustainability, Sustainable Design, Green IT, Cloud Computing and Teaching and Learning. Tomayess published her work in several peer-reviewed journals, books, book chapters, papers and research reports and participated in local and global conferences. Finally, Tomayess supervised PhD, Master of Phil, and Master Dissertations; and she received Curtin Guild Awards for her teaching and supervision. In 2017, she received the overall winner Student Guild Outstanding Achievement in Teaching Excellence 2017 Award for university wide. Tomayess received 2021 Green Gown Awards Australasia -Next Generation Learning and Skills - Highly Commended to the Green Information Technology and Sustainability unit.

S Zaung Nau is currently a Lecturer in the School of Management and Marketing, at Curtin University. For her PhD thesis, she analysed the determinants of public transport use in Western Australia and its temporal and spatial variations. Her research interests include collaborative e-learning, data mining, demand modelling and transport data analytics. She has been conducting her research on travel behaviour patterns and demand planning for public transport and sustainable transportation in Perth, Western Australia. Her current research interest is the comparative analysis of private car use and public transport use to identify the areas where they are competing or complementing each other. Her other research areas are geospatial analysis on socio-economic, public health and sustainability developments, especially in waste management to reduce CO2 emission from it.

Lydia Maketo (Australia) holds a PhD in Information Systems from Curtin University (Australia), where her thesis focused on the application of mobile technologies in higher education. Her research interests encompass a broad range of topics including mobile technologies, the integration of technology in education, and innovative teaching and learning practices. Lydia is particularly passionate about exploring the role of artificial intelligence (AI) in education, examining how AI can be leveraged to enhance learning experiences, personalize education, and improve educational outcomes. In recognition of her contributions to the field, Lydia is a Fellow of the Academy of Higher Education Academy (FHEA)

Sumaiya Pervaiz is a PhD student at Curtin University with three completed master's degrees from the same university: Master of Project Management, Master of Information Systems, and Master of Philosophy in Information Systems. My previous publication focused on social networking sites in higher education in Pakistan, which is connected to my current PhD research.

Sarita Hardin-Ramanan (BEng, MSc, PhD, SFHEA) heads the Faculty of Accounting, Finance, Law, and IT at Curtin Mauritius. With nearly 25 years of teaching experience at both undergraduate and postgraduate levels, Sarita focuses on enhancing student learning, often leveraging research to implement and promote best practices. Since 2016, Sarita transitioned from senior lecturer to her current leadership position where she manages multiple stakeholders, including her team of lecturers, faculty students, and industry partners. Sarita also remains active in PhD supervision and research in areas including IT Governance, Green IT, Graduate Work-Readiness and the Future of Work, and Predictive Analytics.



Marwah Alomair is a PhD candidate at the Business School, Curtin University, Australia. Her research focuses on cybersecurity awareness, phishing detection, and digital risk within organizational settings. She has presented her work at international conferences and is currently preparing several publications on cybersecurity behaviour and its implications for organizational management. Marwah holds a Master's degree in Advanced Computer Science and has a background in IT project management. Her academic interests lie at the intersection of technology, human behaviour, and digital safety. She is passionate about developing practical solutions and advancing cybersecurity education and awareness across both academic and professional sectors.

Bilal Abu Salih, Ph.D. is an Associate Professor at the University of Jordan and an Adjunct at Curtin University. He holds a Ph.D. in Information Systems (with a focus on Social Big Data Analytics) from Curtin University. Bilal's research interests include; Data Science, Social Big Data, Semantic Analytics, NLP, and the like. Bilal has worked with cross-disciplinary funded research projects which are related to data analytics, machine learning, data mining of social media, big data analysis, etc. Those projects are involved with academic research and also involved software development and industrial implementation.

Dr. Phalgu Niranjana works as a Professor in OB & HRM in School of Business of ASBM University. She has done Masters and M. Phil. in Psychology and Ph.D. in Business Administration. She has to her credit thirty-nine publications in nationally and internationally referred journals and fourteen books published by Sage, Response Books, Excel, and Bloomsbury. She has also presented a number of papers in different national and international conferences. She is one of the eleven teachers in the world to have been awarded with the ACBSP Teaching Excellence Award for her continued commitment to student success in 2022.

Dr. Biswajeet Pattanayak is a distinguished academician and former professor of HR & Organizational Behavior at IIM Indore, IIM Lucknow, and IIM Mumbai. He holds a Ph.D. and D.Litt. in Organizational Behavior, along with a D.Sc. in Management Science. Currently, he is the Founder and President of ASBM University in Bhubaneswar. Additionally, he has held the position of Director at the Indian Institute of Bank Management, Guwahati, under the auspices of the Reserve Bank of India. Prof. Pattanayak's academic contributions include 26 books and over 104 research publications in prestigious, peer-reviewed journals, and his work is frequently featured in leading global journals. He has also been honored with the International Teaching Excellence Award from the Accreditation Council for Business Schools and Programs (ACBSP), USA, recognizing him as one of the top ten management educators worldwide.

Dr. Kalyan Shankar Ray is a Professor of Economics and Banking at ASBM University, where he was the founding Vice-Chancellor. Earlier, he worked as a professional banker with three decades of rich experience in commercial banking. He edits an international journal devoted to management and has published eleven edited volumes on management and related subjects. He is a voracious reader and a bibliophile and loves to listen to Hindustani classical music. He holds a Ph. D. in Management from Utkal University with a PG Diploma in Bank Management from NIBM, Pune, and is a Fellow of the Indian Social Science Academy.

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