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"It Sounds Useful, but I'm Not Sure How": Understanding Social Workers' Adoption of Digital Design Thinking Through the UTAUT Model

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ABSTRACT

In the rapidly evolving social work environment, integrating Digital Design Thinking (DDT) presents a groundbreaking approach to enhancing service delivery and client outcomes. This study investigated the adoption of DDT in social work practice. Employing a descriptive quantitative research design guided by the Unified Theory of Acceptance and Use of Technology (UTAUT) model, this study analyzed data from structured surveys of 104 social workers in Oman. Ordinal logistic regression identified performance expectancy and facilitating conditions as pivotal factors influencing the adoption of DDT, reflecting the importance of perceived utility and organizational support. Social influence emerged as a significant contributor, highlighting the impact of peer and leadership encouragement, while effort expectancy posed a barrier, emphasizing the need for user-friendly implementation to ensure successful integration. While most participants acknowledged the potential usefulness of the DDT, many expressed uncertainty about how to implement it effectively in practice, highlighting a gap between perceived value and practical understanding. These findings underscore the need for strategic interventions, including fostering supportive organizational environments, promoting leadership advocacy, and designing user-friendly tools to optimize DDT implementation in social work practice.

Keywords: Digital Design Thinking, Social Work Practice, UTAUT, Ordinal Logistic Regression, Adoption Factors.

INTRODUCTION

In recent years, social work has increasingly integrated digital technologies to enhance service delivery and address complex social issues. These advancements have improved efficiency, expanded access to resources, and fostered more effective interventions for clients and communities. Social workers and human service professionals have utilized artificial intelligence (AI), virtual reality (VR), and data-driven platforms to address community-based challenges and promote social equity (Reamer, 2021; Pascoe, 2022). However, maximizing the benefits of these innovations requires a structured user-centered approach. This has led to the increasing adoption of Design Thinking (DT) as a methodology that ensures digital solutions align with the needs of diverse populations.

Design Thinking (DT) is a human-centered, iterative approach to problem-solving that emphasizes creativity, collaboration, and innovation. It enables professionals to develop solutions by understanding user needs, generating ideas, and prototyping interventions that align with societal demands, technological feasibility, and client value (Li & Zhan, 2022; Rösch et al., 2023). Unlike traditional research methodologies that primarily seek theoretical insights, DT is an action-oriented framework that results in co-created products, services, or

interventions designed to address complex challenges (Bender-Salazar, 2023). While DT has strong foundations in design disciplines, its structured methodology has been widely applied in engineering, business, healthcare (Oliveira et al., 2021; Sandars & Goh, 2020; Thakur et al., 2021), education (Albay & Eisma, 2025; Razali et al., 2022), and social work. Its core principles—empathy, ideation, prototyping, and testing—empower professionals to create solutions that are continuously refined based on user feedback, ensuring effectiveness and sustainability (Martin, Goff, & O'Keeffe, 2023).

Building on the foundations of traditional Design Thinking (DT), Digital Design Thinking (DDT) brings technology into the heart of the problem-solving process. By using digital platforms for ideation, prototyping, and testing, DDT supports real-time collaboration, rapid iteration, and scalable, data-informed solutions (Dragičević et al., 2023; Elsbach & Stigliani, 2018). Bhandari (2019) further emphasizes its neurostrategic potential, describing DDT as a pathway to more adaptive and innovative thinking in digital environments. This integration of technology and creativity makes DDT especially powerful in tackling complex, fast-evolving challenges—extending the reach of design thinking well beyond its traditional boundaries. In the context of social work, where digital transformation is increasingly shaping daily practice, DDT offers promising ways to improve service delivery, strengthen engagement with clients and stakeholders, and inspire innovative responses to community needs. By blending technological tools with a human-centered mindset, DDT empowers social workers to design more flexible and responsive interventions (Mandayam et al., 2023; Siwiec et al., 2025).

In social work settings, Digital Design Thinking (DDT) offers a structured yet flexible process that begins with a deep understanding of the client's needs, followed by idea generation, prototyping, and testing of digital solutions to address those needs effectively. This approach is particularly well-suited to social innovation, as it encourages divergent thinking, opens space for exploring alternatives, and ensures that interventions reflect the real priorities of communities. Recent studies have shown that incorporating design thinking into social work education can expand teaching methods and introduce more creative and engaging learning experiences (Martin, Goff, & O'Keeffe, 2023; Goff, Bagley, & Sadowski, 2024). In practice, involving clients and stakeholders throughout the design process helps social workers create interventions that are not only more effective but also more sustainable and tailored to specific challenges (Docherty et al., 2023; Mahato et al., 2021). This participatory approach also empowers clients by inviting them to take part in shaping the solutions that directly impact their lives. For example, a recent study on a design thinking program aimed at social workers found it fostered innovation in youth services and contributed to more meaningful outcomes (To et al., 2024). By centering client voices and co-creating solutions, DDT supports the development of responsive and inclusive strategies that can better serve marginalized communities.

The adoption of Digital Design Thinking (DDT) is influenced by multiple factors that shape its integration and effectiveness across various industries. Organizational culture plays a crucial role, as workplaces that encourage innovation, collaboration, and user-centered problem-solving are more likely to embrace DDT (Elsbach & Stigliani, 2018). Leadership support further enhances adoption by driving strategic vision, resource allocation, and fostering a digital mindset within teams. Additionally, resource availability, including financial investment, technological infrastructure, and workforce readiness, significantly determines the success of DDT implementation (Kabra & Sangroya, 2024). Organizations equipped with AI-driven analytics, virtual prototyping tools, and digital collaboration platforms can scale design-driven innovation more effectively. Training and digital literacy are also essential, as professionals need the skills and confidence to utilize digital methodologies efficiently. Moreover, external influences, such as market trends, evolving consumer expectations, and regulatory frameworks, impact how organizations approach DDT adoption and integration. When these factors align, organizations can successfully leverage Digital Design Thinking to enhance innovation, service optimization, and user experience in an increasingly digital landscape (Xicang et al., 2024).

Despite the recognized benefits and widespread adoption of digital design thinking (DDT) across various fields, its integration into social work practice remains both limited and underexplored. Addressing this gap requires a focused investigation into the factors that influence the adoption of DDT within the unique context of social work. This aligns with Oman's Vision 2040, which prioritizes digital transformation and innovation across all sectors (Barghash et al., 2024), including social services. Oman's strategic emphasis on leveraging digital technologies to enhance public services makes it an ideal case study for exploring the integration of DDT into social work practice. Guided by the Unified Theory of Acceptance and Use of Technology (UTAUT) model, this study aims to identify the key factors driving the adoption of DDT and to provide actionable insights into how this innovative methodology can enhance the effectiveness and efficiency of social work interventions.

Study Rationale and Research Objectives

The integration of Digital Design Thinking (DDT) into social work practice is an emerging yet underexplored domain with significant potential to enhance service delivery and address multifaceted social challenges. As the field of social work evolves, there is a growing imperative for professionals to leverage new approaches and methodologies to effectively respond to the dynamic and complex needs of clients and communities. However,

the successful adoption of DDT within social work is influenced by various contextual, technological, and organizational factors that require systematic investigation. To address this gap, this study employs the Unified Theory of Acceptance and Use of Technology (UTAUT) as a theoretical framework to examine the key determinants shaping the adoption of DDT among social workers in Oman, encompassing professionals across education, healthcare, military, and social sectors. Through this approach, the study aims to generate empirical insights that address the following research objective:

To identify the key factors and moderating influences shaping the adoption of Digital Design Thinking (DDT) in social work practice using the Unified Theory of Acceptance and Use of Technology (UTAUT) model.

RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

The study aims to determine the factors that affect the adoption of digital design thinking methodologies among social workers in Oman. By employing the well-established Unified Theory of Acceptance and Use of Technology (UTAUT) model, developed by Venkatesh et al. in 2003, this research uses a comprehensive conceptual framework for analysis. According to the UTAUT model, four primary factors determine the likelihood of technology acceptance and adoption: performance expectancy (PE), effort expectancy (EE), facilitating conditions (FC), and social influence (SI). Additionally, the model incorporates four moderator variables—gender, age, experience, and voluntariness of use—that influence the relationship between these core factors and both behavioral intention and usage behaviour. This holistic model provides a detailed understanding of the factors influencing social workers' intentions to integrate digital design thinking in their practice, offering significant insights into the adoption process. Although the UTAUT model has been widely applied across various social work domains, its application to understanding the adoption of DDT in social work remains unexplored. This study aims to bridge that gap, offering valuable insights into the factors that drive or hinder the integration of DDT in professional social work practice.

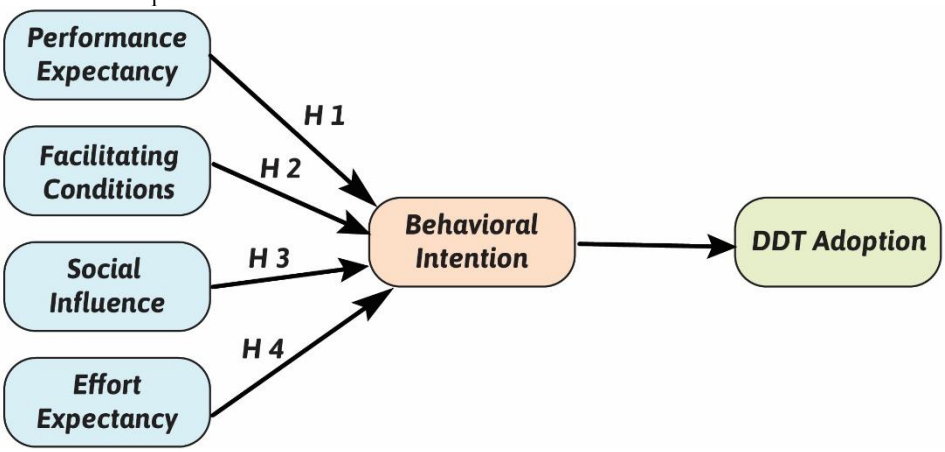

Figure 1. Conceptual framework for Digital Design Thinking (DDT) adoption in social work based on the UTAUT model

Performance expectancy (PE)

Performance expectancy is defined as the degree to which an individual believes that employing a particular information system and technology will improve their job performance (Davis, 1989). Extensive research has consistently shown a strong direct relationship between perceived usefulness and users' attitudes toward adopting digital design thinking methodologies across various fields (Sari et al., 2024; Shahbaz et al., 2019). Understanding this relationship is critical for advancing social work practices in Oman, as it can provide valuable insights into the factors driving the adoption of innovative methodologies. Therefore, we propose the following hypothesis:

H1: The performance expectancy factor has a significant impact on social workers' intentions to integrate digital design thinking in their practice.

Facilitating conditions (FC)

Facilitating conditions refer to the degree to which an individual perceives that organizational and technical infrastructure is available to support the use of information systems and technology (Venkatesh and Bala, 2008). Research consistently shows that facilitating conditions significantly influence individuals' behavioral intentions to utilize technology and information systems (Alam et al., 2020; Hoque and Sorwar, 2017). In this study, facilitating conditions, represented by institutional support, are expected to be a pivotal factor in motivating social workers to adopt digital design thinking methodologies in social settings. Therefore, the following hypothesis is proposed:

H2: The facilitating conditions factor has a significant impact on social workers' intentions to integrate digital design thinking in their practice.

Social influence (SI)

Social influence refers to the degree to which an individual perceives that important others believe they should use a new system (Venkatesh et al., 2003). Empirical evidence from multiple studies indicates that social influence plays a crucial role in shaping users' behavioral intentions to adopt specific information systems and technology (Hoque and Sorwar, 2017; Shiferaw and Mehari, 2019; Wills et al., 2008). Recognizing the importance of this factor, this research examines how social influence affects healthcare social workers' adoption of digital design thinking methodologies. Accordingly, the following hypothesis is proposed:
H3: Social influence factor has a significant impact on social workers' intentions to integrate digital design thinking in their practice.

Effort Expectancy (EE)

Effort expectancy is defined as the simplicity involved in learning and utilizing any given technology and information system (Venkatesh and Bala, 2008). Numerous empirical studies have consistently demonstrated that the adoption of digital design thinking methodologies is significantly influenced by their perceived ease or difficulty of use (Al Salti, 2025; Chereka et al., 2022; Venkatesh et al., 2003). Within the scope of this research, perceived ease of use is conceptualized as the degree to which social workers believe that adopting and using a particular digital design thinking methodology requires minimal additional effort. Understanding this relationship is essential as it can shed light on the barriers and facilitators to adopting innovative methodologies in healthcare social work practice. Therefore, the following hypothesis was formulated:
H4: Effort expectancy factor has a significant impact on social workers' intentions to integrate digital design thinking in their practice.

METHODS

Study Design

This study employed a descriptive quantitative research design, which systematically collects and analyzes numerical data to identify key factors influencing the adoption of digital design thinking (DDT) among social workers. A descriptive quantitative approach is well-suited for studies that aim to measure relationships between variables and interpret trends in data (Kotronoulas et al., 2023). The study utilized descriptive statistics, Cronbach's Alpha, and ordinal logistic regression (OLR) to ensure a robust analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were employed to summarize participants' responses and provide a comprehensive overview of their perceptions. To assess the reliability of the survey instrument, Cronbach's Alpha coefficient was used, a widely accepted method for measuring internal consistency in social science research (Tavakol & Dennick, 2011). The calculated Cronbach's Alpha value of 0.876 indicates a high level of reliability. Furthermore, ordinal logistic regression (OLR) was employed to examine the factors influencing social workers' intention to adopt digital design thinking techniques. OLR is particularly effective for modeling relationships between an ordinal dependent variable and multiple independent variables, making it a suitable approach for analyzing adoption-related behaviors (Menard, 2010).

Data Collection Procedures and Participants

The data collection process for this study took place between May 2024 and June 2024, concentrating on the adoption of digital design thinking (DDT) among social workers. Administered to 104 social workers across various fields, the survey questionnaire was meticulously designed. Participants were drawn from diverse domains of social work, including healthcare, child welfare, school social work, and community development. Their positions ranged from entry-level practitioners to senior social work managers, with professional experience varying between 2 and 25 years. This diversity ensured the inclusion of perspectives from a broad spectrum of expertise and roles, allowing for a comprehensive understanding of the factors influencing DDT adoption. These professionals were selected for their direct engagement with innovative approaches in their practices, making them highly relevant to this study. Their insights provided critical data on the applicability and benefits of the UTAUT model across various fields of social work. To capture whether participants perceived value in the adoption of

DDT and the UTAUT model, the questionnaire included specific items targeting their views on the benefits, challenges, and anticipated outcomes of integrating digital design thinking into their work.

The initial version of the questionnaire was evaluated by five faculty members specializing in social work, sociology, and design thinking to ensure the questions were appropriate and relevant. The reviewers' feedback validated that the questionnaire items aligned with the research objectives. Additionally, Cronbach's alpha coefficient was calculated at 0.876, showing high internal consistency and reliability. Based on this feedback, several questions were rephrased for clarity and precision, leading to the finalization of the questionnaire (Izah, Sylva, & Hait, 2024).

In the final version of the questionnaire, two distinct parts were organized. Part one included categorical questions to assess participants' familiarity with analytical thinking and problem-solving methods, which are essential components of Digital Design Thinking (DDT). Understanding their prior exposure to these skills helped contextualize their readiness for adopting DDT methodologies. Additionally, this section featured an ordinal response variable measured using a Likert scale, categorizing adoption levels as low, moderate, and high. The second part of the questionnaire featured carefully designed 5-point Likert scale questions to evaluate participants' attitudes toward factors influencing the adoption of digital design thinking (DDT) in various social work practice settings. This section was systematically organized into five sub-sections, each focusing on a critical dimension of adopting and utilizing digital design thinking. The structured design facilitated a comprehensive assessment of the factors affecting its implementation. Table 1 presents a sample item for each variable and the supporting references, while the entire questionnaire is presented in Appendix (A).

Table 1. Sample items and supporting references for UTAUT constructs

Variable	Sample Item	Supporting Reference
Performance Expectancy	Using digital design thinking tools enhances my productivity in social work tasks.	Sari et al., 2024; Shahbaz et al., 2019
Facilitating Conditions	I have the resources necessary to use digital design thinking tools in my social work practice.	Alam et al., 2020; Hoque and Sorwar, 2017
Social Influence	My supervisor thinks that I should use digital design thinking tools in my practice.	Shiferaw and Mehari, 2019; Wills et al., 2008
Effort Expectancy	I find digital design thinking tools to be user-friendly.	Chereka et al., 2022; Sari et al., 2024

Data Analysis Procedure

An ordinal logistic regression (OLR) model was applied to identify the factors influencing the adoption of digital design thinking (DDT) among social workers. OLR is particularly effective for analyzing relationships where the dependent variable is ordinal, consisting of ordered categories, and multiple independent variables are involved. In this study, the dependent variable represents varying levels of DDT adoption, categorized as low, moderate, and high. OLR estimates the likelihood of an outcome falling into a specific or higher category based on predictor variables. A key assumption of OLR is the proportional odds assumption, which asserts that the relationship between predictor variables and the odds of being in a lower versus higher category is constant across all categories (Kook et al., 2022; Liu and Koirala, 2012).

The model employs Maximum Likelihood Estimation (MLE) to estimate regression coefficients (β) by maximizing the likelihood of observing the given dataset. These coefficients are subsequently transformed into odds ratios (OR=Exp(β)), providing an interpretable measure of how predictor variables influence the likelihood of adopting DDT. Odds ratios greater than 1 indicate a positive relationship, suggesting that an increase in the predictor variable raises the likelihood of adoption. Conversely, odds ratios less than 1 suggest a negative relationship, indicating that an increase in the predictor reduces the likelihood of adoption (Murad et al., 2003; Taylor et al., 2006).

The relationship between the ordinal dependent variable (Y) and the predictor variables is expressed by the following cumulative logit model:

$$\text{logit}\left(\mathrm{P}\left(\mathrm{Y} \le j \,|\, \mathbf{X}\right)\right) = \ln\left(\frac{P\left(Y \le j \,|\, \boldsymbol{X}\right)}{1 - P\left(Y \le j \,|\, \boldsymbol{X}\right)}\right) = \gamma_j + \boldsymbol{X}.\boldsymbol{\beta},$$

where $j = 1,2,\ldots,k-1$. Here $\mathrm{P}\left(\mathrm{Y} \le \mathrm{j} \,|\, \mathbf{X}\right)$ represents the cumulative probability that the outcome variable Y falls in category *j* or lower, $\boldsymbol{\gamma_j}$ denotes the threshold parameter for category *j*, $\mathbf{X}$ is the vector of predictor

variables, and **β** is the vector of regression coefficients. The model is built on the proportional odds assumption, which means that the relationship between the predictor variables and the odds of being in a lower versus a higher category is constant across all categories (Menard, 2010).

The model is built on the proportional odds assumption, ensuring consistency in the relationship between predictor variables and cumulative odds across all outcome categories. This assumption enhances the stability and interpretability of the model's coefficients (Pohlmann and Leitner, 2003). The OLR model provides key outputs, including odds ratios (OR), which quantify the effect size of predictors and offer actionable insights into the likelihood of different outcomes, along with 95% confidence intervals (CI) to indicate the precision of these estimates. This model is particularly effective for studying factors influencing decision-making processes, such as the adoption of innovations or behaviors. Diagnostic tests, such as the Omnibus Tests of Model Coefficients, validate the model's ability to explain the variance in the dependent variable, while goodness-of-fit metrics, including Cox & Snell R Square and Nagelkerke R Square, confirm its reliability.

RESULTS

Descriptive Analysis

Table 2 offers a comprehensive overview of the descriptive statistics on factors that influence the adoption of digital design thinking (DDT) in social work practice. The data reveals that respondents exhibit a significantly high average adoption score of 84.7% for employing DDT to enhance the effectiveness of social work interventions. This substantial adoption rate indicates a strong acknowledgment among social workers of the value and importance of DDT techniques in their professional practice. The high adoption rate suggests a positive attitude among social workers towards the potential benefits of DDT. It underscores their recognition of how these innovative techniques can lead to more effective and efficient interventions, ultimately improving client outcomes. This favorable disposition towards DDT is crucial as it demonstrates a readiness to integrate innovative practices into traditional social work methods, fostering a more dynamic and responsive approach to addressing client needs. This readiness to embrace new methodologies can significantly enhance the overall quality of social work services.

Facilitating conditions, such as infrastructure, resources, and technical support, are crucial for adopting DDT (Cavalcanti et al., 2022). They ensure access to necessary tools and training for effective implementation (Venkatesh et al., 2003). Recent research confirms their significant role in technology adoption by providing essential support (Camilleri & Camilleri, 2023). The analysis revealed that facilitating conditions scored an average of 74.7%, highlighting their essential role in enabling professionals to implement DDT methodologies. These conditions include technological infrastructure, resource accessibility, and comprehensive training, which support core DDT techniques, such as empathizing through technology-driven engagement, ideation via collaborative platforms, prototyping using design software, and testing through virtual simulations. Addressing these facilitating conditions enables organizations to equip social workers with the necessary competencies to integrate DDT effectively, foster innovation, and enhance client outcomes.

Effort expectancy ranked third with an average score of 61.9%, indicating that the adoption of Digital Design Thinking (DDT) in social work practice is heavily influenced by the perceived ease of use and user-friendliness of these techniques. A higher score in effort expectancy suggests that social workers are more inclined to adopt DDT if they find the tools intuitive and straightforward to use. Ensuring that these techniques are designed with user-friendly interfaces and require minimal effort to operate is essential for their widespread acceptance and utilization. This finding emphasizes the need for DDT tools to be accessible and easy to learn. When the technology is user-friendly, the learning curve is minimized, and social workers can quickly become proficient in using these tools. This ease of use reduces resistance to adoption, allowing practitioners to seamlessly integrate DDT methods into their daily routines. Consequently, they can focus more effectively on improving their interventions and delivering enhanced services to their clients.

Social influence ranked fourth, with an average score of 58.4%. This suggests that social pressure and the influence of others, such as supervisors and peers, play a moderate role in a social worker's decision to adopt and use Digital Design Thinking (DDT). While not the most critical factor, social influence still has a considerable impact on the adoption process. The moderate score highlights the importance of support and encouragement from colleagues and superiors in fostering an environment conducive to adopting new technologies. When influential figures within an organization advocate for the use of DDT, it can create a ripple effect, encouraging others to follow suit. This social endorsement can validate the importance and effectiveness of DDT, making social workers more comfortable and willing to integrate these tools into their practice.

Table 2: Descriptive statistics for variables in the DDT adoption model

Variable	Statistical measure						
A. Dependent variable	Categories	Frequency	Percentage	Mean		Mean(%)	SD
Adoption of DDT	Low	11	10.6	2.54		84.7	0.682
	Moderate	26	25.0				
	High	67	64.4				
B. Independent variables	Mean				SD	Min.	Max.
	Possible range		Value	(%)			
1. Facilitating conditions	(4 – 20)		14.94	74.7%	4.337	5	9
2. Performance expectancy	(4 – 20)		15.82	79.1%	3.808	7	20
3. Effort expectancy	(4 – 20)		12.38	61.9%	3.819	4	20
4. Social influence	(4 – 20)		11.67	58.4%	4.054	4	20

REGRESSION RESULTS

Table 3 presents the results of the ordinal logistic regression (OLR) analysis, highlighting the critical factors influencing the adoption of Digital Design Thinking (DDT) in social work practice. The analysis provides a comprehensive understanding by detailing the odds ratios and confidence intervals for each predictor, effectively capturing their contributions to adoption decisions. The model's robustness and reliability are demonstrated through rigorous validation and performance metrics. Goodness-of-fit measures, including the Nagelkerke Pseudo R-square and McFadden Pseudo R-square, are utilized to highlight the model's effectiveness in capturing and predicting the key factors influencing the adoption of Digital Design Thinking (DDT). These metrics underscore the model's ability to provide a comprehensive and reliable explanation of the variables driving adoption decisions. Moreover, the proportional odds assumption was tested and confirmed, further validating the appropriateness and accuracy of the OLR model in addressing the research objectives.

Significance of the variables in the OLR model

Performance expectancy emerged as a significant factor influencing the adoption of DDT. The odds ratio (OR) for performance expectancy was 2.065, with a 95% confidence interval (CI) of 1.217–3.508. Since the entire confidence interval exceeds 1, this confirms a consistent and statistically significant positive effect. The OR indicates that individuals who perceive DDT as beneficial for enhancing the effectiveness of social work are 106.5% more likely to adopt it compared to those who do not. This finding highlights the critical role of perceived utility in encouraging the adoption of DDT.

Facilitating conditions were identified as another significant predictor, with an OR of 1.937 and a 95% CI of 1.244–3.013. The CI entirely exceeds 1, demonstrating a consistent and statistically significant positive influence. The OR suggests that social workers are 93.7% more likely to adopt DDT when they perceive that adequate support, infrastructure, and resources are in place. This result emphasizes the importance of organizational and technical support in promoting the adoption of new technologies.

Social influence also played a significant role in the adoption of DDT. The OR was 1.910, with a 95% CI of 1.097–3.323. The entire CI exceeding 1 confirms the robustness of social influence as a predictor. The OR implies that for every unit increase in the social influence score, the odds of adopting DDT increase by 91%. This finding underscores the importance of peer and societal expectations in shaping technology adoption decisions, suggesting that social approval and encouragement play a pivotal role in adoption behaviour.

Effort expectancy, however, had a statistically significant but inverse relationship with DDT adoption. The OR was 0.486, with a P-value of 0.025. As the OR is less than 1, it indicates that for each unit increase in perceived effort required to use DDT, the odds of adoption decrease by 51.4%. This result highlights that higher perceived effort acts as a barrier to adoption, underscoring the importance of ease of use in promoting technology acceptance among social workers.

Model validation and performance

The ordinal logistic regression (OLR) model was validated using multiple statistical measures, confirming its suitability and robustness in analyzing the factors influencing the adoption of Digital Design Thinking (DDT) in social work practice. The proportional odds assumption was tested using the Chi-square test for parallel lines, which yielded a non-significant P-value of 0.079. This result confirms that the proportional odds assumption is met, validating the appropriateness of the OLR model for the analysis.

Additionally, the model's goodness-of-fit was assessed using a highly significant goodness-of-fit test statistic (P-value < 0.001), demonstrating that the full model provides a significantly better fit to the data compared to the null model. These results establish the reliability of the findings and the credibility of the conclusions drawn from the analysis (Atinafu et al., 2023).

The model's predictive power was further confirmed by the high values of Nagelkerke and McFadden Pseudo R-squares. The Nagelkerke Pseudo R-square value of 0.922 indicates that the model explains 92.2% of the variability in adoption decisions, showcasing exceptionally strong explanatory power. Similarly, the McFadden Pseudo R-square value of 0.822 reveals that 82.2% of the variability in decisions is accounted for, further emphasizing the model's predictive accuracy and reliability. Together, these measures validate the model as a robust framework for understanding the factors that influence the adoption of DDT in social work practice.

Table 3. Ordinal logistic regression estimation results

Parameters		Estimate (β)	S. E(β)	Waldχ^2	Df	P-value	Exp(β)	95% C.I for Exp(β)	
Threshold	Constant 1	12.381	3.244	14.568	1	.000	-	-	-
	Constant 1	18.605	3.861	23.215	1	.000	-	-	-
Location	FC	.661	.226	8.565	1	.003	1.937	1.244	3.013
	PE	.725	.270	7.212	1	.007	2.065	1.217	3.508
	EE	-.722	.323	4.994	1	.025	0.486	0.258	0.915
	SI	.647	.283	5.240	1	.022	1.910	1.097	3.323
Model Fit									
Chi-square (df=4) = 148.224 (P-value = 0.000)									
Nagelkerke Pseudo R-square = 0.922									
McFadden Pseudo R-square = 0.822									
Test of Parallel Lines									
Chi-Square	df	P-value							
8.368	4	.079							

DISCUSSION

The high odds ratio for performance expectancy highlights the importance of perceived benefits in driving the adoption of DDT. Social workers are likely to embrace DDT if they believe it will improve their practice's efficiency, effectiveness, and overall impact. This finding aligns with the Unified Theory of Acceptance and Use of Technology (UTAUT), which posits that performance expectancy is a significant determinant of technology acceptance. (Abdalla et al., 2024; Bayaga & du Plessis, 2024; Dwivedi et al., 2019)

These findings have important implications for policy and practice for Social Work. Given the pivotal role of performance expectancy, it is essential to communicate and demonstrate the tangible benefits of DDT in social work. This includes showcasing success stories, providing evidence-based results, and offering practical examples of how DDT can enhance various aspects of social work practice, such as case management, client engagement, and service delivery. Social work institutions and policymakers should prioritize developing and offering professional training programs that focus on the practical applications of DDT in social work. These programs should highlight the benefits and effectiveness of DDT through real-life case studies and interactive workshops. Furthermore, they should establish continuous development opportunities that keep social workers updated on the latest advancements in DDT and its applications in social work. In addition, more focus should be placed on engaging key stakeholders, including policymakers, social work leaders, and community organizations, to build support for the adoption of DDT. Highlight the potential for improved service delivery and client outcomes.

Facilitating conditions refer to the degree to which individuals believe that organizational and technical infrastructure exists to support the use of new technology. In this context, it includes access to necessary resources, support from management, and availability of technical assistance. The significant odds ratio suggests that when social workers perceive strong facilitating conditions, their likelihood of adopting DDT increases substantially. This aligns with the Unified Theory of Acceptance and Use of Technology (UTAUT), which posits that facilitating conditions are crucial for technology adoption (Al-Gahtani, 2016; Butt et al., 2022; Cao & Nguyen, 2022).

The findings suggest that enhancing the support and resources available to social workers can significantly increase the adoption of DDT. This includes not only providing the necessary tools and technologies but also ensuring that there is adequate training and support to help social workers integrate these technologies into their practice. For instance, develop training programs that cover the basics of DDT, its applications in social work, and

common troubleshooting techniques. These programs should be accessible to all social workers and tailored to different skill levels. Also, establish a policy framework that supports the integration of DDT into social work practices. This should include guidelines on funding, resource allocation, and evaluation metrics.

Peer impact plays a critical role, indicating that their colleagues and professional networks when deciding to adopt new technologies significantly influence social workers. Professional norms and expectations also drive behavior change; when influential colleagues or leaders endorse and adopt DDT, it creates a ripple effect, encouraging others to follow suit. Additionally, perceived support from peers and the broader professional community enhances confidence in the new technology, making social workers more likely to adopt DDT (Anderson et al., 2011; Shibly et al., 2022; Vannoy & Palvia, 2010).

To enhance the adoption of Digital Design Thinking (DDT) in social work, it is crucial to regularly highlight success stories within the community, displaying tangible benefits and positive outcomes. Developing programs to identify and empower key influencers within social work networks is also essential. These influencers should be provided with specialized training and resources to effectively advocate for DDT adoption. Additionally, establishing online forums, webinars, and workshops will create platforms where social workers can discuss DDT, share experiences, and troubleshoot challenges collectively.

This underscores the necessity of reducing perceived effort to enhance adoption rates. This conclusion aligns with various studies that highlight the crucial role of effort expectancy in the adoption of innovative technologies (Duong et al., 2023; Zacharis & Nikolopoulou, 2022). To enhance social workers' proficiency in using DDT tools, create a modular training program that allows them to progress through levels of complexity, starting with basic concepts and advancing to applications that are more complex. Structure the curriculum into modules, each focusing on specific skills and tools, and offer flexibility in pacing, allowing social workers to complete modules at their speed. Additionally, conduct interactive workshops where social workers can practice using DDT tools in real-time scenarios, receive immediate feedback, and ask questions. Schedule these workshops regularly, both online and in-person, facilitated by experienced trainers who can guide participants through practical exercises and case studies.

Oman's Context and Its Role in DDT Adoption

1. Social Context

Oman's cultural values emphasize community, collaboration, and social cohesion (Albadri, 2012), aligning closely with the principles of Digital Design Thinking (DDT). The collectivist nature of Omani society inherently supports participatory approaches and stakeholder engagement, both of which are foundational to DDT methodologies. This study highlights the significant role of social networks and hierarchical relationships in professional settings, further reinforcing the impact of social influence on DDT adoption. In particular, peer encouragement and supervisor support are key drivers in fostering the implementation of innovative practices like DDT, validating the importance of social influence as identified in the findings.

2. Economic Context

Oman's economic diversification strategy, as outlined in Vision 2040, places a strong emphasis on innovation and digital transformation (Okitasari & Katramiz, 2022). The government's investment in digital infrastructure, including e-governance initiatives and technology hubs, has established an enabling environment for integrating Digital Design Thinking (DDT) into social work practices. However, constraints related to funding, technical expertise, and institutional readiness highlight the need for adequate support systems to facilitate effective implementation. These findings underscore the critical need for targeted investments in DDT, including the development of supportive infrastructure, seamless technology integration, and specialized training programs.

3. Institutional Context

Oman's institutional landscape is undergoing a significant transformation, with an increasing emphasis on technology integration in public service delivery (Abdelfattah et al., 2024). This shift is particularly evident in the social work sector, where technology-driven approaches are being adopted to enhance efficiency and client outcomes. The hierarchical structure of many institutions in Oman underscores the pivotal role of leadership support and policy directives in fostering innovation. This observation aligns with the study's findings, which identify facilitating conditions and social influence as key determinants of Digital Design Thinking (DDT) adoption. Leadership engagement and well-defined policy frameworks are essential for cultivating a supportive environment that enables the effective integration of DDT into social work practices.

Implications

These findings emphasize the critical factors influencing the adoption of Digital Design Thinking (DDT) in social work, aligning with the Unified Theory of Acceptance and Use of Technology (UTAUT) model. The successful integration of DDT requires a strong institutional commitment to providing technological infrastructure, training, and resource accessibility, as these elements create a foundation for sustained adoption

(Butt et al., 2024). Ensuring access to updated software, stable internet connectivity, and appropriate hardware is essential for operational efficiency. However, infrastructure alone is insufficient; continuous training programs, workshops, and mentorship initiatives are needed to build digital competency among social workers, fostering confidence and ease of use. Leadership engagement plays a pivotal role, as institutional policies that prioritize DDT, set clear usage expectations, and reward innovative practices contribute to a culture of sustained digital adoption.

Beyond institutional support, social networks and peer influence significantly shape the adoption process (Nguyen et al., 2024). Social workers are more likely to embrace DDT when encouraged by colleagues, supervisors, and professional networks. Establishing collaborative environments through interdisciplinary meetings, joint workshops, and strategic partnerships with universities, research centers, and technology firms enhances knowledge-sharing and ensures access to the latest advancements in DDT. By fostering a culture of continuous learning, organizations can reduce resistance to change, encourage the exchange of innovative practices, and build collective expertise. Participation in global professional networks and international conferences further strengthens these collaborative efforts, exposing practitioners to diverse implementation strategies and best practices.

While collaboration is crucial, structured feedback mechanisms are equally important to ensure DDT remains relevant and effectively integrated into practice (Xing et al., 2023). Institutions should implement regular feedback loops through surveys, focus groups, and structured discussions, allowing practitioners to share experiences, highlight challenges, and suggest improvements. Investing in feedback analytics software can streamline data collection, enabling organizations to track progress and make evidence-based refinements to their DDT strategies. A responsive feedback system ensures that digital interventions remain user-centered and adaptable to emerging needs, ultimately improving service efficiency and client outcomes.

The ethical and regulatory landscape also plays a crucial role in ensuring the responsible adoption of DDT. Institutions must develop comprehensive guidelines that address legal compliance, data security, and ethical decision-making, thereby safeguarding client confidentiality and trust. Standardizing best practices mitigates risks and promotes transparency, accountability, and ethical integrity in social work. A well-defined regulatory framework not only protects clients but also enhances professional confidence in the use of DDT, reinforcing its credibility within the sector.

In addition to national policies, engaging in global knowledge-sharing initiatives is essential for maximizing the impact of DDT in social work. Institutions that participate in international collaborations, cross-cultural exchanges, and interdisciplinary research gain access to diverse perspectives and proven strategies. Learning from real-world case studies and global best practices helps refine implementation models (Yigitcanlar et al., 2024), ensure adaptability to local contexts, and promote the standardization of effective DDT methodologies. This exchange of expertise accelerates the learning curve, reduces implementation risks, and strengthens the long-term sustainability of DDT adoption in social work.

CONCLUSION

The integration of Digital Design Thinking (DDT) into social work practice represents a transformative approach, aiming to enhance the efficacy and responsiveness of social services in the digital age. Utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) model, this study has shed light on the key factors that drive the adoption of DDT in social work. Our findings reveal that performance expectancy, effort expectancy, social influence, and facilitating conditions are critical determinants influencing social workers' acceptance and utilization of DDT.

Performance expectancy emerged as a significant motivator, indicating that social workers are more likely to adopt DDT if they perceive it as beneficial in enhancing their job performance and client outcomes. Effort expectancy also played a crucial role, suggesting that the ease of use and user-friendly nature of DDT tools are vital for their acceptance. Social influence, encompassing the impact of peers, supervisors, and the broader organizational culture, highlighted the importance of a supportive environment in promoting DDT adoption. Finally, facilitating conditions, including access to resources, training, and technical support, were identified as essential enablers for successful integration.

Limitations and Future Research Directions

While this study provides valuable insights into the factors influencing the adoption of Digital Design Thinking (DDT) in social work practice, it is not without limitations. First, the research focuses on Oman as a case study, which, while providing a rich contextual lens, may limit the generalizability of the findings to other regions with different sociocultural and institutional dynamics. Future research could address this by conducting comparative studies across multiple countries or regions to assess the universality of the identified factors. Second, the study primarily utilizes quantitative methods, which, although effective in identifying key determinants, do not capture the nuanced experiences and perceptions of social workers regarding DDT adoption. Incorporating

qualitative approaches, such as interviews or focus groups, in future studies could provide a deeper understanding of these dynamics. Finally, this study examines the initial adoption of DDT; future research could highlight its long-term impact on social work practice and client outcomes, providing a more comprehensive evaluation of its efficacy and sustainability.

Appendix (A)

Digital Design Thinking Adoption in Social Work Practice Questionnaire

Section One: Demographic Information

- Gender
  - Female
  - Male
- Age Group
  - Under 30 years old
  - 30–35 years
  - 36–40 years
  - 41–45 years
  - 45 years and above
- Educational Level
  - Undergraduate
  - Postgraduate
- Work Sector
  - Government
  - Private
  - Civil Society
- Field of Work
  - Education
  - Health
  - Social
  - Economics
  - Law
- How many years of work experience do you have?

(Write-in response or select range)

- Do you have experience using digital tools in your work?
  - Yes
  - No
- Do you have prior experience with design thinking methodologies?
  - Yes
  - No
- Do you have the freedom to choose whether or not to use digital design thinking in your work?
  - Yes
  - No

Section Two: Factors Influencing the Adoption of Digital Design Thinking (Based on the UTAUT Model)

Instructions:

Please use a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) to indicate your level of agreement with each of the following statements.

Variable	Items descriptions
Performance expectancy	Using digital design thinking tools enhances my productivity in social work tasks.
	Digital design thinking improves the quality of services I provide to clients.
	Digital design thinking helps me achieve better outcomes in my social work practice.
	Using digital design thinking tools makes my job easier.
Facilitating conditions	I have the resources necessary to use digital design thinking tools in my social work practice.
	I know necessary to use digital design thinking tools effectively.
	I can get help from others when I have difficulties using digital design thinking tools.

	The digital design thinking tools I use are compatible with other systems I use in my work.
Social influence	My supervisor sees the importance of using digital design thinking in our work.
	My supervisor thinks that I should use digital design thinking tools in my practice.
	My peers encourage me to use digital design thinking in my social work tasks.
	I receive support from my organization to use digital design thinking tools.
Effort expectancy	Learning to use digital design thinking tools is easy for me.
	I find digital design thinking tools to be user-friendly.
	It is easy for me to become skillful at using digital design thinking tools.
	I find it easy to integrate digital design thinking into my daily social work practices.

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