Structural Analysis of Counsellors' Competencies in Digital Counselling Practice Using ISM and MICMAC

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ABSTRACT

The digital transformation of counselling, accelerated by technological advancements and the COVID-19 pandemic, has redefined the competencies required for effective, ethical, and client-focused online services. In Malaysia, this shift necessitates a clear understanding of how different competencies interrelate to support high-quality digital counselling practice. This study aims to determine and propose a Counsellors' Competencies in Digital Counselling Practice (CCDCP) model based on expert consensus. Using Interpretive Structural Modelling (ISM) and Matrice d'Impacts Croisés Multiplication Appliquée à un Classement (MICMAC) analysis, input was obtained from six experienced counselling professionals. Six key competencies were identified: Digital Competence, Communication Skills, Self-Management Support, Ethical Competence, Cultural Competence, and Self-Development & Reflective Practice. ISM results revealed that Digital Competence is the ultimate dependent competency, developed through the integration of the other five driver competencies. MICMAC analysis positioned Communication Skills, Self-Management Support, Ethical Competence, Cultural Competence, and Self-Development & Reflective Practice as linkage variables with high driving and dependence power, while Digital Competence was classified as a dependent variable. No competencies were found in the autonomous or independent categories, underscoring the highly interconnected nature of skills in digital counselling. The findings highlight that digital competence emerges as an outcome of strengthening interpersonal, ethical, cultural, and self-regulatory skills, rather than functioning as an isolated driver. This integrated ISM–MICMAC framework provides valuable guidance for policymakers, training institutions, and professional bodies to design holistic competency development programs that ensure counsellors are equipped to meet the complex demands of digital counselling practice.

Keyword: Digital Counselling, Counsellor Competencies, Interpretive Structural Modelling (ISM), MICMAC Analysis

INTRODUCTION

The digital transformation of counselling practice has accelerated significantly over the past decade, driven by advancements in communication technologies and the widespread adoption of online platforms for mental health services. In Malaysia, this shift has become increasingly evident, particularly in the aftermath of the COVID-19 pandemic, which compelled counsellors and clients to transition to digital mediums such as video conferencing, email, and instant messaging applications (Dores et al., 2020). This evolution not only offers new opportunities for service delivery but also demands a new set of skills and competencies from counsellors to ensure effectiveness and ethical integrity in practice (Reamer, 2013). In this context, digital counselling requires practitioners to integrate multidimensional competencies, encompassing technological proficiency, ethical considerations, and effective client engagement strategies (Cameron et al., 2017; Kekäläinen et al., 2023). Traditional core counselling competencies such as communication skills, empathy, and process management must now be complemented by new capabilities, including mastery of video conferencing platforms, safeguarding digital confidentiality, and maintaining therapeutic rapport in virtual environments (Zainudin et al., 2022). In Malaysia, additional challenges include the digital divide between urban and rural areas, varying levels of digital literacy among both clients and counsellors, and the pressing need for more explicit ethical guidelines from professional bodies.

Structural analysis of counsellors' competencies in digital practice is essential to identify the hierarchical relationships and interdependencies among these competency elements. Interpretive Structural Modelling (ISM) enables researchers to map the structural relationships between multiple factors, while the Matrice d'Impacts Croisés Multiplication Appliquée à un Classement (MICMAC) analysis is used to categorise these elements according to their levels of influence and dependence (Iamratanakul, 2019). This dual approach provides valuable insights for developing strategic training frameworks, policies, and professional practice guidelines tailored to Malaysia's unique socio-technological landscape (Gorane & Kant, 2013). This study focuses on four primary domains of counsellor competencies in digital contexts client engagement, ethical considerations, technological proficiency, and core competencies. Understanding the structural relationships among these domains will allow training providers and policymakers to design holistic and responsive competency development strategies. Ultimately, such an approach has the potential to enhance the quality, accessibility, and impact of digital counselling practice in Malaysia, ensuring it remains relevant and effective in addressing contemporary mental health needs.

LITERATURE REVIEW

The development and implementation of competency models in counselling are crucial for ensuring effective and high-quality counselling services. Various studies highlight the importance of different competencies required by counsellors, ranging from basic counselling skills to digital competencies. For instance, in Slovenia, counsellors emphasize the significance of personal competencies and view competency models as essential tools for self-reflection and identifying areas for further education (Gibson et al., 2021). This underscores the need for a well-rounded competency model that not only includes technical skills but also personal and reflective abilities (Daharnis et al., 2018; Parikh-Foxx et al., 2020). Digital competencies are increasingly important in the modern counselling landscape. The rapid digitalization of education and counselling services necessitates that counsellors possess strong digital skills. Research indicates that digital competency is vital for improving work efficiency and adapting to educational informatization (Kekäläinen et al., 2023). Additionally, healthcare professionals need a wide range of digital counselling competencies to provide effective video-mediated counselling, including preparation, implementation, interaction, and self-development (Paalimäki-Paakki et al., 2022). This shift towards digital counselling requires a comprehensive understanding of digital tools and platforms, as well as the ability to maintain a therapeutic relationship in a virtual environment.

The evaluation and supervision of counselling competencies are also critical areas that need attention. In Indonesia, the lack of standardized evaluation and supervision systems for counselling skills is a significant issue (Muqodas et al., 2020). Standardized instruments can help in assessing counsellors' competency levels and identifying areas for development. Similarly, the use of web-based video clips for training counsellors in Canada has shown positive outcomes, suggesting that digital tools can effectively enhance counselling skills. Moreover, the development of applications for evaluating and supervising counselling skills can provide a structured approach to competency development, ensuring that counsellors are well-prepared to meet the demands of their profession (Amparbeng & Pillay, 2021).

Research objective

There are two main objectives in writing this article;

i. To determine counsellors' competencies in digital counselling practice model based on expert consensus
ii. To propose the counsellors' competencies in digital counselling practice model based on experts' consensus.

METHODOLOGY

This research uses ISM and MICMAC analysis, with expert opinion included, to find and understand the connection between the strategies that generate the Counsellors' Competencies in Digital Counselling Practice Model. Due to these procedures, a hierarchical link among the factors recognized by the experts will emerge. To better assist and resolve complicated problems or systems comprised of several aspects and their interplay, ISM

was expanded by Warfield (1974) and Thakkar (2021). Strategies for group problem-solving that include organized discussion, such as the Nominal Group Technique (NGT), Focus Group Technique (FGT), brainstorming, focus groups, etc., are ideal for implementing ISM (Attri et al., 2013). An organized hierarchical model may be constructed using the ISM method from a collection of variables or components that may have both direct and indirect effects on each other (Tyagi et al., 2017). Since ISM is a procedure that calls for interpretation and decision-making in groups, it might be considered interpretative. Since ISM simplifies the complicated system or issue's structure, it may be considered structural. Modelling is an integral part of ISM as each model or diagraph represents a different structure. A wide range of fields are making use of ISM, including manufacturing (Khourshed et al., 2023), education (Mishra & Singh, 2019), policy (Khourshed et al., 2023),environment (Chandramowli et al., 2011), and the aviation industry (Cantarelli et al., 2018).The ISM approach follows a structured sequence of steps:

1. The appreciating diversity competency (ADC) is identified through a structured review and expert panel discussions, or by summarizing findings from relevant literature.
2. The Structural Self-Interaction Matrix (SSIM) is prepared by comparing each variable in pairs, based on expert rankings during the Nominal Group Technique (NGT). The relationships are shown with symbols: V (ADC i more important than ADC j), A (ADC j more important than ADC i), X (both equally important and related), and O (unrelated).
3. The Reachability Matrix (RM) is developed from the SSIM by changing the symbols V, A, X, and O into binary values using specific rules.
4. The RM is then divided into levels through a partitioning process.
5. A hierarchical digraph is built from the final RM to create the ISM model.
6. MICMAC analysis is applied to group the variables into clusters according to their driving and dependence power.

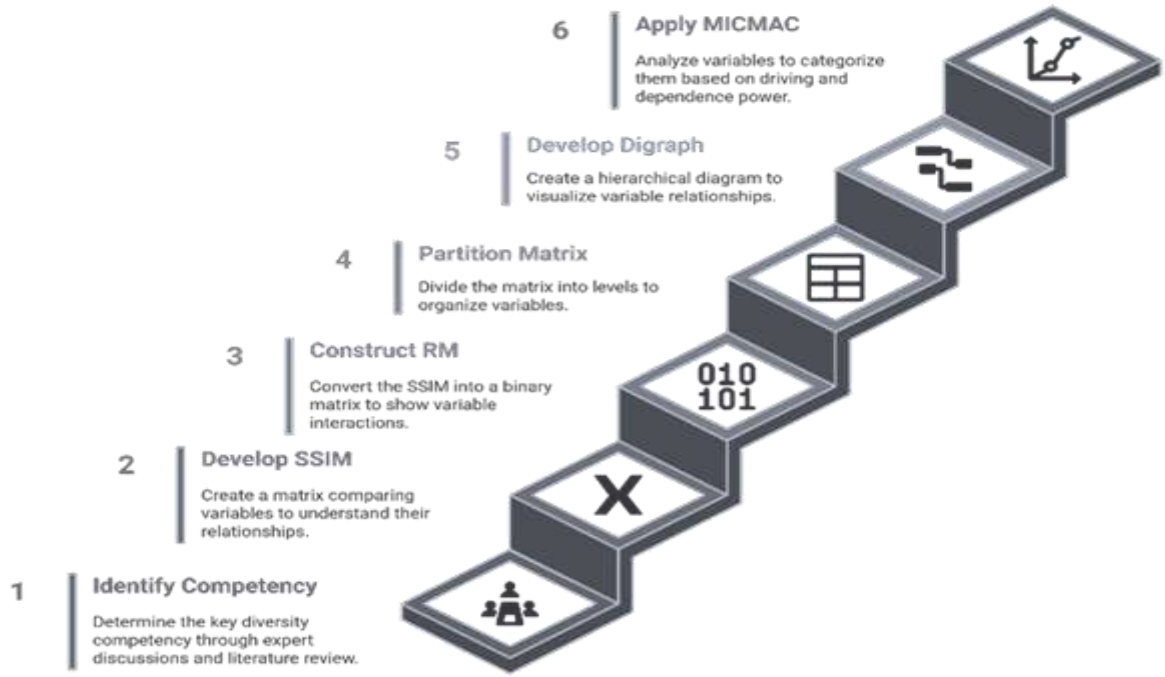

Figure 1: ISM Step

3.1 Sample

For this research, we enlisted the help of six education experts for ISM sessions. Six professional experts were willing to take part in the research. The experts from same expertise in counselling and have the experience in 5 years in fields in Table 1

Table 1 Expert Qualification

No.	Academic Qualification	Fields Expertise
1.	Master	Guidance and Counselling
2.	Master	Counselling
3.	Ph.D.	Counselling
4.	Master	Counselling
5.	Degree	Counselling
6.	Ph.D.	Guidance and Counselling

DATA ANALYSIS

4.1 Finding from step 1

For the first step, the researcher interviewed experts and reviewed some literature to determine the elements or steps that can be taken to implement counsellors' competencies in digital counselling practice. Table 2 are show the results.

Table 2 Elements /Guidelines for counsellors' competencies in digital counselling (CCDC)

Element	Key Action
Digital Competence	Enhance counsellors' proficiency in using and platforms to deliver counselling effectively, including mastery of teleconferencing software, secure data management, and familiarity with emerging digital technologies relevant to mental health services (Rodríguez Morales et al., 2023).
Communication Skills	Strengthen counsellors' ability to convey empathy, build rapport, and maintain engagement in a virtual setting by adapting verbal and non-verbal cues for online communication (Haryati, 2020).
Self-Management Support	Foster counsellors' capacity to manage workload, stress, and emotional demands in digital counselling environments by implementing time management strategies, self-monitoring practices, and emotional regulation techniques (Ubaidi, 2017).
Ethical Competence	Ensure strict adherence to professional ethical guidelines in digital counselling practice, including informed consent, confidentiality, data privacy, and professional boundaries (Aga Mohd Jaladin, 2013).
Cultural Competence	Promote the ability to understand, respect, and respond effectively to the cultural backgrounds, values, and communication styles of diverse clients in a digital space (Harun et al., 2022)
Self-Development	Encourage continuous professional growth through reflective practice, engagement in professional development programs, and the integration of new counselling models suitable for digital platforms (Voon et al., 2022)

4.2 Finding from step 2

Based on table 2, the Structural Self-Interaction Matrix (SSIM) reveals the directional influence among six competencies showing, through the symbols V, A, and blanks, that Digital Competence is predominantly influenced by other competencies, Communication Skills and Self-Management Support exert influence over several others, while Ethical, Cultural, and Self-Development competencies play more selective or dependent roles in the overall interrelationship structure.

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Table 2 Structural Self Interaction Matrix (SSIM)

Variables	1	2	3	4	5	6
Digital Competence		A	A	A	A	A
Communication Skills			V	A	A	V
Self-Management Support				V	A	V
Ethical Competence					A	A
Cultural Competence						A
Self-Development						

4.3 Finding from step 3 (Reachability matrix)

The Reachability Matrix (RM) presents the binary relationships among six counsellor competencies in digital counselling, quantifying their driving power (influence over others) and dependence power (extent of being influenced). From table 3 the analysis reveals that Communication Skills and Self-Development and Reflective Practice have the highest driving power (5), positioning them as key driving variables that significantly influence the development of other competencies. Self-Management Support and Cultural Competence follow closely with a driving power of 4, indicating their role as linkage variables that both influence and are influenced by others. Ethical Competence holds a moderate driving power (3), suggesting it plays a supportive but interlinked role in the competency structure. Notably, Digital Competence has the lowest driving power (1) but the highest dependence power (6), marking it as a highly dependent variable—its development relies heavily on improvements in other competencies, particularly communication and self-development skills. This structure implies that enhancing core interpersonal and reflective skills will likely cascade into stronger digital capability, making them strategic leverage points for training interventions in digital counselling practice.

Table 3

Variables Reachability Matrix (RM) For Analysis	1	2	3	4	5	6	Driving Power
Digital Competence	1	0	0	0	0	0	1
Communication Skills	1	1	1	1	1	0	5
Self-Management Support	1	0	1	1	0	1	4
Ethical Competence	1	0	0	1	1	0	3
Cultural Competence	1	0	1	1	1	0	4
Self-Development and Reflective Practice	1	0	0	1	1	1	4
Dependence Power	6	3	3	4	2	3	

4.4 Finding from step 4 and 5

The Level Partitioning (LP) table organizes the six counsellor competencies into hierarchical levels based on their reachability sets, antecedent sets, and intersection sets, derived from the Reachability Matrix. Based on table 4, *Digital Competence* (Element 1) is positioned at Level 1, as its reachability set contains only it, indicating it is the most dependent competency and sits at the top of the hierarchy emerging as an outcome of developing other competencies. All remaining elements *Communication Skills*, *Self-Management Support*, *Ethical Competence*, *Cultural Competence*, and *Self-Development and Reflective Practice* are grouped at Level 2, as their reachability and antecedent sets are interconnected, reflecting mutual influence and positioning them as foundational drivers within the competency structure. This arrangement highlights a critical insight: strengthening the Level 2 competencies will naturally lead to improvements in Level 1 (*Digital Competence*), suggesting that in digital counselling practice, technological proficiency is not developed in isolation but is the

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result of enhancing interpersonal, reflective, and cultural capabilities.

Table 4 Level Partitioning (LP)

Elements (Mi)	Reachability Set R (Mi)	Antecedent Set A (Ni)	Intersection Set R (Mi) ∩A(Ni)	Level
1	1,	1, 2, 3, 4, 5, 6,	1,	1
2	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2
3	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2
4	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2
5	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2
6	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2, 3, 4, 5, 6,	2

The ISM hierarchy model in Figure 3 illustrates that, in digital counselling practice, Digital Competence is the ultimate dependent competency, developed through the strengthening of five key driver competencies: Communication Skills, Self-Management Support, Ethical Competence, Cultural Competence, and Self-Development & Reflective Practice. Each of these foundational skills directly influences and shapes a counsellor's ability to deliver effective, ethical, and culturally sensitive online services. This highlights that technological proficiency does not emerge in isolation but through the integration of strong interpersonal, ethical, cultural, and self-management capabilities. From Figure 4, the Counsellors' Competencies in Digital Counselling Practice (CCDCP) Model has been developed based on this analysis.

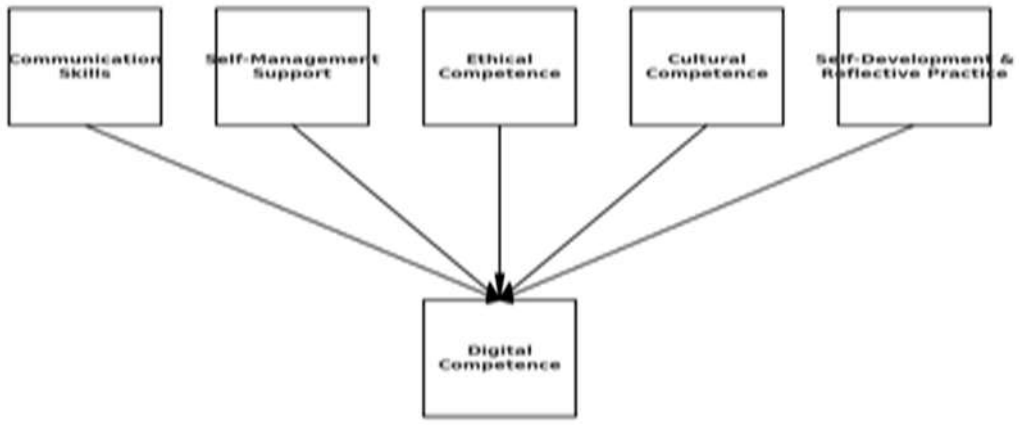

Figure 3: Model Digraph (SmartISM output)

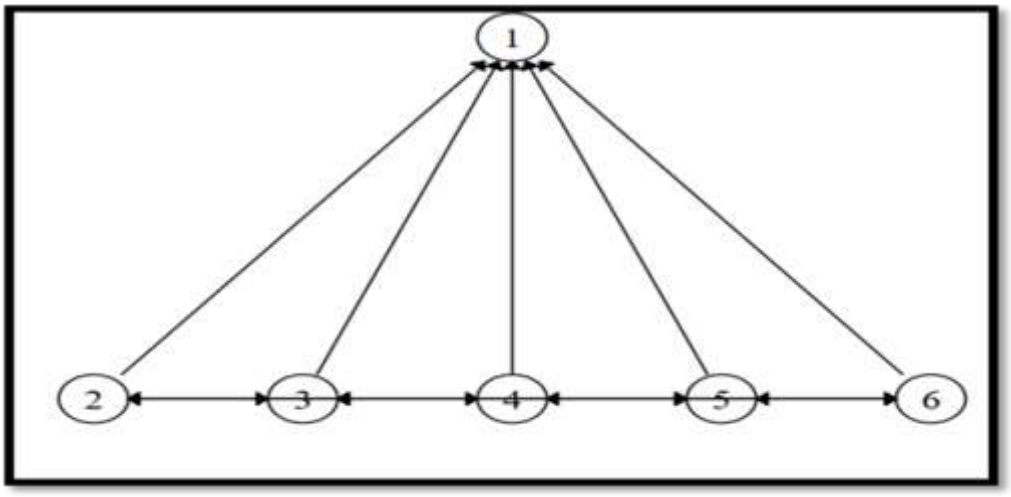

Figure 4: Counsellors' Competencies in Digital Counselling Practice (CCDCP) Model

4.5 Finding from step 6 (MICMAC analysis)

The cross-impact matrix multiplication applied to classification (MICMAC) analysis in this study follows a similar approach to that used by Attri et al. (2017) and Pitchaimuthu et al. (2019). The primary aim of MICMAC analysis is to identify the key DEGs (variables) that drive the system. In this process, the driving power of each SI is plotted on the Y-axis, while its dependence power is plotted on the X-axis. Each CCDCP is then categorized based on the combination of these two measures as follows:

Quadrant I (Autonomous Variables)

Comprises competencies with both low driving and low dependence power, indicating limited influence on the model's overall performance. While these competencies—such as familiarity with seldom-used platform features—are supportive, they do not substantially drive or depend on other factors.

Quadrant II (Dependent Variables)

Includes competencies with low driving power but high dependence power. These elements, such as client satisfaction and digital counselling effectiveness, are primarily the outcomes of other competencies. Their success relies on strong ethical practices, effective privacy management, and robust communication skills within the digital context.

Quadrant III (Linkage Variables)
Competencies demonstrate both high driving and high dependence power. These act as pivotal connectors within the CCDCP model, influencing and being influenced by multiple variables. For instance, the ability to establish therapeutic relationships online and to adapt traditional counselling methods for digital environments significantly shapes overall competency but remains highly sensitive to external factors such as technological advancements and institutional policies.

Quadrant IV (Independent Variables)

Consists of the model's primary drivers—competencies with high driving power and low dependence power. These include digital ethics proficiency, data security management, and core technology skills. Their development and reinforcement are critical, as they serve as foundational enablers that cascade improvements across the other competencies in the model.

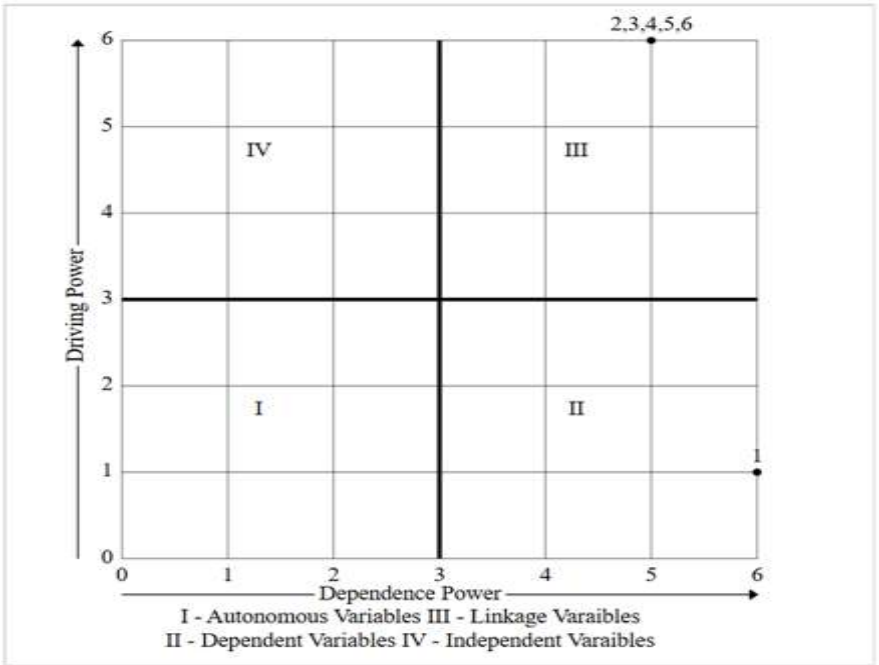

Figure 5: MIMAC Analyse

The MICMAC analysis diagram in Figure 5 categorizes the six competencies for counsellors in digital counselling practice based on their driving power (influence on other variables) and dependence power (extent to which they are influenced by others). Competencies 2 (Communication Skills), 3 (Self-Management Support), 4 (Ethical Competence), 5 (Cultural Competence), and 6 (Self-Development & Reflective Practice) are positioned in Quadrant III (Linkage Variables), indicating that they have both high driving power and high dependence power. This means they are highly influential yet strongly interdependent changes in these areas can significantly impact other competencies, while they remain sensitive to developments elsewhere in the system. Competency 1 (Digital Competence) falls into Quadrant II (Dependent Variables), demonstrating low driving power but very high dependence power; its growth is shaped by the advancement of other competencies and it cannot progress in isolation. The absence of variables in Quadrant I (Autonomous) and Quadrant IV (Independent) suggests that there are no competencies that are entirely isolated or purely driving. This reinforces the notion that in digital counselling, competency development is a highly interconnected process in which improvements in core skills reciprocally enhance overall professional capability.

KEY FINDING

The MICMAC analysis of counsellors' competencies in digital counselling practice highlights a complex and interdependent competency framework where five out of six competencies Communication Skills, Self-Management Support, Ethical Competence, Cultural Competence, and Self-Development & Reflective Practice are situated in Quadrant III (Linkage Variables). This indicates that these competencies have both high driving power and high dependence power, meaning they are simultaneously influential in shaping other competencies and highly susceptible to being influenced in return. In the context of digital counselling, this reflects the reality that effective online practice is not built on isolated skills but on a dynamic interplay of interpersonal, ethical, reflective, and cultural capabilities (Cameron et al., 2017). For example, enhancing cultural competence in a counsellor can improve communication sensitivity and ethical awareness, which then positively affects their ability to manage themselves effectively in a virtual setting (Frunž, 2021). However, the interdependence also means that any deficiency in one of these competencies can disrupt the balance of the entire competency system.

Digital Competence, positioned in Quadrant II (Dependent Variables), emerges as a critical insight in this analysis. While it is often assumed that technological proficiency is the core requirement for digital counselling, the MICMAC results show that digital competence is largely the outcome of strengthening other key competencies rather than a standalone driver. This means that a counsellor's ability to navigate digital platforms, apply e-counselling tools, and ensure online client engagement is directly dependent on their interpersonal communication, ethical judgment, cultural adaptability, and capacity for self-regulation. Without these underlying competencies, digital skills remain superficial and may fail to translate into effective practice (Kekäläinen et al., 2023). This challenges the traditional emphasis on technical training alone and calls for a competency development strategy that addresses the foundational human skills underpinning digital counselling.

The absence of competencies in Quadrant I (Autonomous) and Quadrant IV (Independent) further reinforces the need for an integrated, systemic approach to professional development in digital counselling. Since no competency functions in isolation or as a sole driver, training interventions should be designed to enhance multiple interlinked competencies concurrently. For example, a professional development program might combine communication skills training with reflective practice workshops, ethical case study discussions, and cultural sensitivity modules, all within a digitally mediated learning environment. This holistic approach ensures that improvements in one competency reinforce progress in others, creating a sustainable and resilient skill set for counsellors. Ultimately, the MICMAC findings underscore that in digital counselling practice, true competence is achieved not through isolated skill acquisition but through the coordinated development of a network of mutually reinforcing professional capabilities.

CONCLUSION

The analysis integrating ISM and MICMAC methodologies for counsellors' competencies in digital counselling practice reveals a highly interconnected competency structure where the majority of competencies Communication Skills, Self-Management Support, Ethical Competence, Cultural Competence, and Self-

Development & Reflective Practice function as linkage variables with both high driving and high dependence power. This positioning indicates that these competencies not only influence one another significantly but are also mutually dependent, meaning that growth or decline in one area will likely cause a ripple effect throughout the system. The ISM hierarchy further reinforces this, showing that these five competencies serve as the foundation for achieving Digital Competence, which is placed as a dependent variable, highlighting its reliance on the development of the other skills.

The MICMAC results emphasize that digital competence in counselling is an outcome rather than an independent driver. Effective online practice is therefore contingent upon strengthening the human-centric skills that underpin it, such as ethical decision-making, culturally sensitive communication, self-regulation, and reflective growth. The absence of autonomous or purely independent competencies underscores that no skill stands alone; all are part of a dynamic network that must be developed in an integrated manner. Consequently, professional development programs should adopt a holistic, interconnected training approach targeting multiple competencies simultaneously to achieve sustainable improvements in counsellors' ability to deliver effective, ethical, and client-cantered digital counselling services.

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