

The Zaltman Metaphor Elicitation Technique (ZMET) in qualitative research: a systematic review of its use for exploring the subconscious mind

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Abstract

The Zaltman Metaphor Elicitation Technique (ZMET) is a qualitative research method employed to elicit individuals' subconscious thoughts, feelings, and experiences by exploring metaphors. This systematic review, encompassing 47 studies published between 2019 and 2023, demonstrates that ZMET is frequently utilised within marketing and tourism, focusing primarily on perception, experience, and meaning. Principal findings indicate that the modifications to Storytelling and Missed Images are the most commonly implemented, whilst combinations with in-depth interviews and grounded theory are prevalent. Thematic analysis identified five principal themes: experience and emotion, meaning and perception, identity and self, values and beliefs, and decision-making. ZMET effectively investigated these themes, particularly within contexts involving complex emotions and experiences. This review concludes that ZMET remains a relevant and adaptable method within qualitative research. Its core strength lies in its capacity to uncover hidden layers of meaning, whilst its weaknesses pertain to analytical complexity and potential subjectivity. Implications and recommendations for best practice, including the necessity for meticulous planning, comprehensive interviewer training, and robust data triangulation, are also discussed concerning the future development and application of ZMET.

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INTRODUCTION

The complex phenomenon of human behaviour has long been a principal focus across diverse academic disciplines, ranging from marketing (Kotler & Keller, 2016; MacInnis & Folkes, 2017) and psychology (Baumeister & Masicampo, 2010; Fiske, 2018) to sociology (Bourdieu, 1984; Swidler, 2001) and anthropology (Geertz, 1973; Douglas, 2003). Frequently, individual decisions and actions are driven not solely by easily articulated rational factors (Simon, 1955) but also by subconscious drives (Greenwald & Banaji, 1995; Wilson, 2004), emotions (Lerner et al., 2015; Pham, 2007), and past experiences embedded within implicit memory (Schacter et al., 2011; Tulving, 2000). Understanding these hidden aspects operating beyond explicit consciousness (Evans, 2008; Kahneman, 2011) is crucial for achieving a more holistic comprehension of human motivation (Vohs & Baumeister, 2016), preferences (Lichtenstein & Slovic, 2006), and decision-making (Gigerenzer & Gaissmaier, 2011; Thaler & Sunstein, 2009). This needs to understand the subconscious aligns with the fundamental tenets of both psychoanalytic theories, with its exploration of deep unconscious motivations, and modern cognitive psychology, which examines

the implicit processes that shape perception and judgment. Consequently, qualitative research techniques are critically important in understanding this complexity, particularly those focused on exploring the subconscious mind (Braun & Clarke, 2013; Denzin & Lincoln, 2018). Furthermore, research addressing the subconscious realm holds significant potential for contributing to developing theory and practice across various fields, particularly within the discipline of psychology (e.g., Angela & Lentari, 2023; Herdiana, 2024).

One technique proven effective in probing the subconscious mind is the Zaltman Metaphor Elicitation Technique (ZMET). Developed by Gerald Zaltman, a professor at Harvard Business School (Zaltman, 1997, 2017), ZMET is a qualitative research technique designed to elicit the deep metaphors individuals use to understand and interpret the world around them (Zaltman & Coulter, 1995; Christensen & Olson, 2002). The inspiration for this method famously arose from Zaltman's research in rural Nepal. He discovered that when villagers were asked to photograph elements representing health in their lives, their resulting images were deeply metaphorical (e.g., a photo of feet symbolizing the long walk to access clean water), often revealing insights far richer than what they could articulate in verbal interviews. This discovery—that people think in images and metaphors, not merely in words—became the foundational principle of ZMET. Through a series of in-depth interviews guided by images selected by participants, ZMET enables researchers to access thoughts, feelings, and experiences that are often difficult to verbalise (Coulter, Zaltman, & Coulter, 2001; Zaltman & Zaltman, 2008). By focusing on metaphors, ZMET can penetrate surface-level awareness to reach deeper cognitive structures (Lakoff & Johnson, 1980; Kövecses, 2010), where the beliefs, values, and emotions underpinning behaviour are stored (Zaltman, 2016; Christensen & Olson, 2002). **As such**, ZMET provides a practical methodological bridge between abstract psychological theories—such as schema theory in cognitive psychology or the concept of the unconscious—and empirical data, making it a potent tool for psychological investigation.

Since its introduction, ZMET has been utilised in diverse research contexts, from understanding consumer behaviour (Coulter & Zaltman, 1994; Zaltman & Coulter, 1995; Coulter, 2008) and branding (Christensen & Olson, 2002; Zaltman, 2018) to exploring complex socio-cultural issues (Woodside, 2004; Levy, 2005). Research prior to 2019 firmly established ZMET as a reliable method, particularly within the field of marketing. However, as the landscape of qualitative research has evolved and the method's adoption has grown across various disciplines, no systematic review has specifically consolidated the latest trends, modifications, and challenges in its application. This review seeks to fill that gap. By limiting its focus to the last five years (2019–2023), this review offers a fresh and contemporary perspective. This period is significant as it encompasses notable methodological shifts, including the rise of online research and the application of ZMET to pressing global issues. This focused analysis allows for a critical synthesis of the method's contemporary evolution, aiming to build upon previous knowledge by examining ZMET's utility within the context of current research challenges. Furthermore, this review specifically highlights the application of ZMET beyond the marketing field, an area that remains relatively underexplored

comprehensively, thereby offering a unique contribution to researchers in psychology and other social sciences who are considering its use.

This systematic review aims to critically map and analyse the utilisation of ZMET within the recent literature (2019-2023). Specifically, this review will (1) identify variations, modifications, and combinations of ZMET with other methods; (2) analyse trends in its usage, including the disciplines, research topics, and populations studied; (3) critically evaluate its strengths and weaknesses; (4) formulate implications from the findings and recommendations for the future development of the ZMET methodology.

This paper is structured as follows: The second section will outline the methodology employed in this systematic review. The third section will present the results of the analysis, divided into four sub-sections: an overview of ZMET usage, variations and modifications of ZMET, combinations of ZMET with other methods, and a thematic analysis linking findings from various studies to the principal themes explored via ZMET. The fourth section will discuss usage trends, strengths and weaknesses, implications for future research, and the limitations of this review study. Finally, the fifth section will present the conclusion, summarising the main findings and highlighting the prospects for ZMET.

METHOD

This systematic review examines literature published between 2019 and 2023, focusing on utilising the Zaltman Metaphor Elicitation Technique (ZMET) in qualitative research. The review adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). Literature searches were conducted in January 2024 across major academic databases, including Scopus, Web of Science, ProQuest, and EBSCOhost, covering the publication period from 1 January 2019 to 31 December 2023. Search terms included "ZMET," "Zaltman Metaphor Elicitation Technique," and "metaphor elicitation," combined with keywords relevant to various disciplines such as "marketing," "consumer behaviour," "psychology," "sociology," "healthcare," and "tourism," amongst others. The search was restricted to articles published in peer-reviewed journals to ensure the quality and credibility of the included studies.

Inclusion criteria applied during literature selection were as follows: (1) articles published within the 2019–2023 timeframe to focus the review on recent developments in ZMET utilisation; (2) articles explicitly reporting the use of ZMET, either as the principal method or as one of the methods employed in the study; (3) articles providing a sufficiently detailed description of the ZMET methodology utilised, including any modifications or combinations with other methods, where applicable. Exclusion criteria comprised: (1) articles merely mentioning ZMET superficially without providing sufficient methodological detail (e.g., citing ZMET only as an example of a projective technique within qualitative research); (2) literature reviews not specifically focused on ZMET, editorials, or book chapters that did not present original empirical data regarding the utilisation of ZMET; (3) articles not available in English.

The literature selection process involved several stages. Initially, titles and abstracts identified through database searches were screened against the inclusion and exclusion criteria. Potentially relevant

articles were downloaded and read in full to ascertain their eligibility based on the established criteria. The complete flow of this selection process, detailing the number of articles at each stage, is presented in the PRISMA 2020 flow diagram (Figure 1).

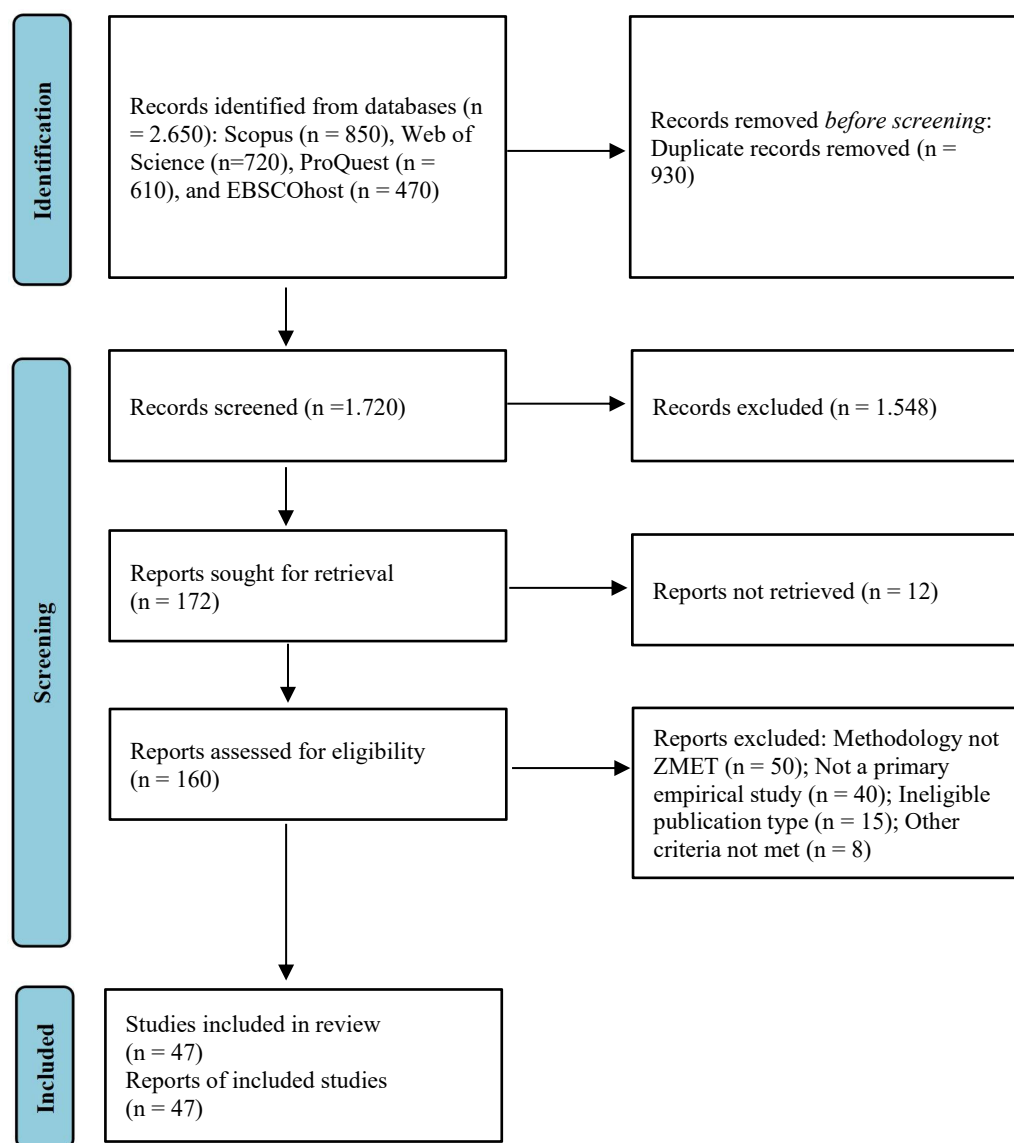


Figure 1. PRISMA 2020 flow diagram detailing the study selection process. Adapted from Page et al. (2021).

Data from the eligible articles were systematically extracted into a predefined template (presented as Table 1), encompassing information regarding: (1) Author(s) and year of publication; (2) Population/sample investigated; (3) Research focus; (4) ZMET method employed (full or modified), including specific steps implemented (e.g., Storytelling, Missed Images, Sensory Images, Summary Image, etc.); (5) Other methods utilised in combination with ZMET, where applicable; (6) Academic discipline within which the research was situated; and (7) Principal findings pertinent to the utilisation of ZMET.

Data analysis proceeded in two phases. Firstly, descriptive analysis was employed to provide an overview of ZMET utilisation within the reviewed literature, encompassing frequency of use, geographical distribution, academic disciplines, and research foci. Secondly, thematic analysis was applied to identify and categorise the principal themes explored through ZMET across the various studies. This analysis was facilitated using Atlas.ti software to support inductive and iterative data coding. The trustworthiness of the coding process was ensured using a two-coder protocol. Initially, articles were analysed independently, followed by a joint discussion to compare findings. Any discrepancies were resolved through a consensus-building process, requiring that a rationale for each code be presented with direct reference to the source text. A final code or theme was only accepted upon mutual agreement. This iterative process ensured consistent and credible data coding. Identified themes were subsequently interpreted and situated within the broader literature on ZMET and qualitative research to comprehensively understand contemporary trends and developments in applying ZMET.

Table 1. Summary of Included Studies Utilising ZMET (2019–2023)

Researcher(s) & Year	Population/Sample	Research Focus	Method(s) Used	Notes/Specifics	Discipline	Key Findings
Prince et al. (2019)	CEOs & employees of STARGATE company (n=12)	CEO Archetypes	Modified ZMET (Storytelling, Missed Images)	5–7 images, focus on storytelling and missed images.	Management	Effective CEOs balance stability and innovation.
Karatzas et al. (2019)	Heavy users of luxury goods in Taiwan (n=28; 15 ZMET, 13 FGD)	Ethical luxury	ZMET + FGD	12 "luxury" images, 12 "ethics" images; qualitative content & thematic analysis.	Marketing	Luxury consumers consider ethics, but luxury remains the primary priority.
Trabelsi-Zoghalmi & Touzani (2019)	Internet users in Tunisia exploring virtual experiences (n=17)	Virtual experience	Album-on-Line (AOL) method inspired by ZMET	Participants searched for images online during the session, content & thematic analysis.	Marketing	The virtual experience is influenced by social interaction and immersion.
Garg & Chhikara (2019)	Study 1: University students (n=150); Study 2: ZMET Participants (n=10), India	Meaning of flowers	Modified ZMET (Storytelling, Missed Images, Sorting, Construct Elicitation (modified), Most & Least Representative Image, Sensory Images, Summary Image, Vignette)	Modified image collection instruction: "What do flowers mean to them?"; thematic analysis, means-end chain, HVM.	Marketing	Flowers possess strong symbolic meanings related to emotions and social relationships.
Ayala et al. (2019)	University students in Mexico, Argentina, Ecuador, and Bolivia (n=1,617)	Image of Brazil	ZMET for questionnaire development, SEM-PLS	ZMET is used only in the initial phase.	International Relations	Social, economic, and political factors influence the image of Brazil.
Joy et al. (2020)	Novice & expert wine consumers in Canada (n=30; 17 novice, 13 expert)	Embodied experience in wine-tasting	Modified ZMET (Wine Tasting)	The stimulus was wine (Pinot Gris/Noir) tasted during the session; hermeneutic qualitative analysis.	Gastronomy	Wine tasting involves all senses and is influenced by prior knowledge and experience.
Kalkan & Gürses (2020)	Open university students in Turkey (n=7,522)	Metaphorical perceptions of open education	Modified ZMET (Storytelling, Missed Images, Sorting, Construct Elicitation, Perceptual Orientation/Expansion, Sensory Images, Summary Image)	Image collection details unclear; content analysis, thematic analysis, gender & regional comparisons.	Education	Open education is perceived as a flexible and accessible opportunity.
Truong (2020)	Undergraduate students in Danang (n=16)	Perception of a liveable city	Full ZMET	12 images, no logos/names; theme identification & consensus map.	Urban Planning	Liveable cities are associated with green spaces, good

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Dortyol (2020)	Frequent shoppers (n=10)	Consumers' hidden thoughts/feelings about store scent and its effects on shopping experiences	Full ZMET; Hierarchical Value Map developed	Used <i>Perfume</i> novel frame; ZMET reveals unconscious thoughts; Linked findings to Compulsive Buying Behavior (CBB) & cognitive dissonance; Cultural context as a limitation	Marketing	infrastructure, and a sense of security. Store scent can subconsciously influence consumer emotions and shopping behaviour.
Tseng & Chiu (2020)	Burn patients (n=8)	Meaning of online support on Facebook	Modified ZMET (Storytelling, Missed Images, Triadic Sort, Summary Image)	Incomplete steps reported; construct categorisation: essence, function & sense, ultimate value; consensus map.	Health	Online support on Facebook aids burn patients in emotional and social recovery.
Cruz & Buchanan-Oliver (2020)	South-East Asian migrants in New Zealand (n=26)	Migrant ambivalence	Interviews, Drawing Exercises (Relational Map, Self-Portraits)	ZMET-inspired, visual elicitation techniques; interpretative qualitative analysis.	Sociology	Migrants experience ambivalence between integration and maintaining their original cultural identity.
Hendijani & Boo (2020)	Gastronomes (n=17)	Stages of gastronome development	Full ZMET	Qualitative analysis, thematic analysis, typology of gastronomes.	Gastronomy	Gastronomes develop through distinct stages in their appreciation and knowledge of food.
Caskey et al. (2020)	Coffee drinkers in Taiwan (n=20)	Psycho-sensory nature of coffee	Full ZMET, Fieldwork	Camera provision & guided narrative; grounded theory, consensus map.	Marketing	The coffee-drinking experience involves complex psychological, social, and sensory aspects.
Mauri (2020)	Individuals knowledgeable about sustainability (n=10)	Meaning of sustainability	Full ZMET	Qualitative analysis, coding, and thematic analysis.	Environmental Studies	Sustainability is construed as an equilibrium between human needs and environmental preservation.
Shearer et al. (2020)	Faculty & students in	Online learning	Modified ZMET (FGD,	Adaptation for FGD; 4	Education	Online learning offers

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	the US (n=18; 11 faculty, 7 students)	experience	Storytelling, Missed Images, Sensory Metaphors)	images (2 current states, two ideal states); thematic analysis (inductive), focused coding.		flexibility but also challenges regarding interaction and engagement.
Jung et al. (2021)	Respondents in South Korea (n=20)	Luxury fashion perception via VR	Modified ZMET (Storytelling, Missed Images, Vignette)	Only these three steps were reported: thematic analysis concept map.	Marketing	VR can enhance the perception of luxury in fashion through immersion and sensory experience.
Prestini & Sebastiani (2021)	Informants (n=15)	Ambivalence in luxury goods shopping	Modified ZMET (Storytelling, Missed Images, Summary Image)	Incomplete steps reported; combination with SWC & member check interviews; interpretative.	Marketing	Consumers experience ambivalence between the desire for luxury goods and ethical/social considerations.
Ji et al. (2021)	Chinese tourists (ZMET n=36, Survey n=356)	Travel intention (SLKTB?)	Full ZMET	Grounded theory analysis, concept map.	Tourism	Travel intention is influenced by internal factors (motivation) and external factors (destination).
Honingh et al. (2021)	People with intellectual/visual disabilities & relatives in the Netherlands (n=26; 14 disabled, 12 relatives)	Perception of visiting regulations & family	ZMET-inspired: Image Description, Elicitation, & Laddering	Not full ZMET; focus on elicitation & laddering; composite narrative.	Disability Studies	Visiting regulations affect relationships between people with disabilities and their families.
Brault et al. (2021)	Young Swazi women & stakeholders (n=31; 12 women, 19 stakeholders)	Perception of HIV prevention & SRH	Modified ZMET (Storytelling, Missed Images, Vignette)	Only these three steps were reported: consensus map: “Tree of Prevention”.	Health	Individual, social, and cultural factors influence HIV prevention.
Warden et al. (2021)	Informants in Taiwan (n=17)	Servicescapes & private self	In-depth Interviews with Photo Guidance, Field Observation	Modified image collection (participants took photos); grounded theory, thematic coding.	Marketing	Servicescapes influence how individuals present themselves in public spaces.
Dzyabura & Peres (2021)	Respondents (n=1,851, Amazon	Brand associations	ZMET-inspired (visual elicitation)	B-VEP platform; focus on online visual data collection	Marketing	Brand associations can be visually elicited and

Researcher(s) & Year	Population/Sample	Research Focus	Method(s) Used	Notes/Specifics	Discipline	Key Findings
Valenzuela et al. (2022)	MTurk), 4,743 B-VEP collages Respondents in Chile (n=38 interviews, 32 FGDs)	Brand hate & ambivalence	ZMET-inspired Projective Technique	& quantitative analysis with machine learning. It did not use full ZMET; a researcher took 42 standard emotion images.	Marketing	analysed using machine learning. Brand hate is often accompanied by emotional ambivalence towards the brand.
Xiang et al. (2022)	Employees & guests of five-star hotels in China	COVID-19 prevention rituals in hotels	Modified ZMET (Storytelling, Missed Images, Metaphors, Vignettes)	Stimulus: video clips & screenshots combined with video ethnography & semi-structured interviews.	Tourism	COVID-19 prevention rituals provide a sense of safety and comfort for hotel guests.
Da Rosa et al. (2022)	Children (n=10) in Brazil	Perceptions of food consumption	Modified ZMET (Storytelling, Missed Images, Construct Elicitation, Sorting, Most Representative Image, Summary Image)	Adaptation of 4 steps: images provided by the researcher, content analysis, thematic analysis, and consensus map.	Nutrition	Children have complex perceptions of food, influenced by taste, health, and family.
Haneberg & Aaboen (2022)	Coaches in Norwegian incubators (n=10)	Learning behaviour coach	Modified ZMET (Storytelling)	5 images, only storytelling; grounded theory, consensus map.	Management	Effective coaching focuses on developing adaptive learning behaviours.
Yoo et al. (2022)	Korean Protestant Christian pilgrims (n=13)	Values of pilgrimage	Full ZMET	Qualitative analysis, coding, consensus map.	Religious Studies	Pilgrimage holds spiritual, social, and transformative value for pilgrims.
Lin & Yeh (2022)	University students in China (n=24)	VR tourist cognition	Full ZMET	Grounded theory, cognitive model development.	Tourism	VR influences tourist cognition and can enhance interest in destinations.
Wang et al. (2022)	Chinese tourists (ZMET n=15, Survey n=527)	REB & situational environmental education	Full ZMET + SEM (CFA)	HVM analysis & consensus map.	Tourism	Situational environmental education can enhance tourists' environmentally responsible behaviour.
Wei et al. (2022)	Tourists (n=18, snowball sampling)	Sense of place in Shichahai HCD	Full ZMET + Essay	Word frequency analysis (ROST CM6.0), consensus map.	Tourism	Interactions between individuals, the physical environment, and social

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Hendler et al. (2022)	Gamblers (n=22)	Temporal orientation & loyalty	Full ZMET	Qualitative analysis, coding, metaphor analysis.	Psychology	context shape a sense of place. Gamblers have differing temporal orientations, influencing gambling behaviour and loyalty.
Jung (2022)	Participants in Canada (n=13)	COVID-19 travel risk perceptions	Full ZMET	Grounded theory, consensus map, member check.	Tourism	Individual, social, and available information factors influence perceptions of COVID-19 travel risk.
Ma et al. (2023)	Gen Z (n=34) in restaurants	Perception of service robots	Full ZMET	Qualitative analysis, consensus map.	Service Robotics	Gen Z holds diverse perceptions of service robots, influenced by functional and emotional factors.
Crosby et al. (2023)	Transgender, genderqueer, etc. & marginalised consumers (n=24)	TIA & marginalised consumers	Interviews, Collage	Adaptation of ZMET elements focuses on the Trauma-Informed Approach (TIA).	Gender Studies	Marginalised consumers require trauma-informed approaches in service interactions.
Sun et al. (2023)	Respondents in Xuling town (n=11)	Construction of public culture	Modified ZMET (Storytelling, Missed Images, Representative & Opposite Images, Summary Image)	Incomplete steps were reported; the researcher created a summary image, and a combination was made with fsQCA.	Sociology	The construction of public culture is a complex process influenced by various factors.
Noh et al. (2023)	Individuals (n=24, 2 athletes)	Human brands & advocacy	Full ZMET	Qualitative analysis, visual data analysis, consensus map.	Marketing	Human brands can act as agents of social change through advocacy.
Batu et al. (2023)	Iranian immigrants in Turkey (n=10)	Perception of Turkish-Iranian culture	Full ZMET	Content analysis, consensus map.	Cultural Studies	Immigrants experience acculturation and negotiate cultural identity in new environments.
Chatterjee & Bryla (2023)	Participants (n=15, aged 18–40 yrs)	Store atmosphere, subconscious factors	Full ZMET	Qualitative analysis, theme identification & consensus	Marketing	Store atmosphere subconsciously

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				map.		influences consumer perceptions and behaviour.
Xiang et al. (2023)	Study 1: Western/Chinese tourists (n=12); Study 2: Western/Asian tourists (n=10)	<i>Communitas</i> experience of glampers	Modified ZMET (Storytelling, Missed Images, Comparison, Most Representative Images, Short Story, Summary Images)	No Sensory Images, Vignette. Modified with a combination of narrative analysis.	Tourism	Glamping offers a unique and transformative <i>communitas</i> experience.
Liu et al. (2023)	Participants (n=12; designers/engineers)	Emotional design of electric vehicles	Modified ZMET (Storytelling)	Combined with three-level image metaphor decoding, grounded theory, and emotional word coding.	Industrial Design	The emotional design of electric vehicles can enhance consumer appeal and acceptance.
Holland (2023)	Participants in the UK (cruisers vs non-cruisers) (n=20)	Cruise holidays, self-congruity	Semi-structured interviews, Image Elicitation	ZMET-inspired, incomplete steps; thematic analysis.	Tourism	Cruise holidays are selected based on congruence with individuals' self-image.
Xiang & Cheah (2023)	Study 1: Gay Chinese tourists (n=16); Study 2: Respondents (n=330)	Embodied experience in Thailand	Full ZMET + Video Ethnography	Combination with video ethnography.	Tourism	Cultural and social factors influence the embodied experiences of gay tourists at the destination.
Anghelcev et al. (2023)	University students in the US (n=12)	"Ideal advertising professor" metaphors	Modified ZMET (Storytelling, Missed Images, Triad Task (modified), Metaphor Probe, Sensory Images, Collage)	Modified Triad Task (images selected based on unclear meaning); qualitative analysis, coding.	Education	Students hold complex expectations of lecturers, which can be revealed through metaphors.
Koelewijn et al. (2023)	Relatives of people with visual & intellectual disabilities in the Netherlands (n=11)	Perception of support quality	Image Description, Elicitation, Laddering	ZMET-inspired, incomplete steps; thematic analysis, composite narrative.	Disability Studies	Relatives' perspectives influence the quality of support for people with disabilities.
Owoseni (2023)	SME owners in Nigeria (n=17)	Meaning of digital transformation	Interviews, Picture-Elicitation	ZMET-inspired, incomplete steps; metaphor analysis.	Business	Entrepreneurs interpret Digital transformation differently and are influenced by the local context.

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Back et al. (2023)	Patients & caregivers (n=16)	Deep metaphors in palliative care	Modified ZMET (Storytelling, Missed Images, Sensory Metaphors)	Only these three steps were reported: qualitative analysis, coding, thematic analysis, and triangulation.	Health	Palliative care involves profound communication about end-of-life emotions and experiences.
Fauchald et al. (2023)	VCP students in Scandinavia (n=12)	Action-based entrepreneurship	Modified ZMET (Storytelling, Missed Images)	5 images.	Entrepreneurship	Action-based entrepreneurship is learned through experience and reflection.

RESULTS AND DISCUSSION

Results

Overview of ZMET Utilization

This systematic review identified 47 studies utilising the Zaltman Metaphor Elicitation Technique (ZMET) within 2019–2023. These studies were distributed across diverse countries, representing the global reach of this method. ZMET was most frequently utilised in North America (the United States and Canada), followed by Asia (China, Taiwan, South Korea, India, and Iran), Europe (the Netherlands, United Kingdom, Norway, and Turkey), Latin America (Mexico, Argentina, Ecuador, Bolivia, and Brazil), the Middle East (Iran), and Africa (Nigeria, Tunisia, and Eswatini). Several studies also involved participants from New Zealand. This broad geographical distribution indicates the expanding adoption of ZMET within qualitative research across the globe.

From a disciplinary perspective, ZMET was predominantly applied within the marketing field (15 studies), encompassing consumer behaviour, branding, advertising, and retail research. This was followed by the field of tourism (11 studies), specifically focusing on tourist experiences, sense of place, travel intentions, and the impact of the COVID-19 pandemic on tourism. ZMET usage also extended into health (5 studies) and education (4). Within health research, ZMET was employed to understand the meaning of online support for burn patients, perceptions of HIV prevention, palliative care, and the metaphors used within that context. In education, ZMET was utilised to explore perceptions of online learning, coaching, and ideal educator metaphors.

Beyond these four principal fields, ZMET was also applied in research within management (3 studies), gastronomy (2 studies), environmental studies (1 study), international relations (1 study), urban planning (1 study), sociology (2 studies), disability studies (2 studies), religious studies (1 study), service robotics (1 study), gender studies (1 study), cultural studies (1 study), industrial design (1 study), business (1 study), and entrepreneurship (1 study). The flexibility of ZMET in addressing diverse research areas underscores its potential as a potent tool for eliciting an in-depth understanding of various phenomena, particularly concerning those involving psychological and socio-cultural aspects.

Regarding the research focus, the studies analysed indicate that ZMET was most frequently used to investigate perceptions (17 studies). Issues investigated through this perceptual lens encompassed diverse topics, ranging from perceptions of liveable cities, travel risk, service robots, brands, and products to culture. Furthermore, ZMET was also frequently utilised to explore experiences (13 studies), particularly consumer and tourist experiences and embodied experiences in wine-tasting and glamping contexts. Understanding the meaning (8

studies) that individuals ascribed to various concepts, such as sustainability, flowers, digital transformation, and online support, also constituted a prominent focus within ZMET-based research. Other themes explored via ZMET included values (3 studies), ambivalence (3 studies), cognition (2 studies), temporal orientation (1 study), CEO archetypes (1 study), learning (1 study), and public culture construction (1 study).

Variations and Modifications of ZMET

Analysis of 47 studies utilising ZMET within the 2019–2023 period reveals significant variation in the implementation of this method, indicating its flexibility and adaptability across diverse research contexts. The majority of studies, namely 29 (approximately 62%), implemented modifications to ZMET, whilst 18 studies (approximately 38%) applied the technique in its complete form according to the original guidelines provided by Zaltman (1997) and Coulter, Zaltman, and Coulter (2001). These standard steps typically encompass Storytelling, Missed Images, Triadic Sort, Image Comparison, Opposite Images, Sensory Images, Mental Map, Summary Image, and Vignette.

The most frequently encountered modification focused on the Storytelling and Missed Image steps, which were implemented in 14 studies. The storytelling step instructs participants to narrate the stories contained within their selected images, whilst missing images prompt participants to describe pictures they could not find but considered essential for representing the research topic. The prevalence of these two steps suggests they are viewed as core elements of ZMET, effectively capable of uncovering participants' embedded metaphors (Zaltman & Zaltman, 2008).

Furthermore, six studies implemented modifications by incorporating the Sensory Images step, which directs participants to describe sensations associated with the research topic, such as taste, smell, and sound. This step, as demonstrated by Joy et al. (2020) in the context of wine tasting, proved effective in exploring the sensory dimensions of experience. Meanwhile, seven other studies incorporated the Summary Image step, which tasks participants with selecting or creating a single image representing their overall thoughts and feelings about the topic, thereby providing a concise and meaning-rich visual summary. Moreover, four studies modified and employed the Construct Elicitation step, requesting participants to elaborate on the constructs or concepts manifested in their chosen images. For instance, Garg and Chhikara (2019) applied this step to investigate the meaning of flowers amongst Indian university students, where participants were asked to explain further the concepts they associated with flowers.

Modifications were also observed concerning technical aspects, such as image collection instructions, the stimuli utilised, and data analysis techniques. For instance, Garg and Chhikara (2019) modified the instructions by directing participants to collect images representing 'what flowers mean to them'. In their study on the embodied experience of wine tasting, Joy et al. (2020) employed wine (Pinot Gris/Noir) as a stimulus directly tasted by participants during the ZMET session. Meanwhile, Xiang et al. (2022) utilised video clips and screenshots as stimuli to explore COVID-19 prevention rituals within hotel environments.

Adaptations of ZMET for Focus Group Discussions (FGDs) were also undertaken, such as in the research by Shearer et al. (2020), where participants discussed their chosen images within a group format. In the digital age, modifications also extended to utilising online platforms. Trabelsi-Zoghalmi and Touzani (2019) adapted the Album-on-Line (AOL) method, which facilitated participants in searching for images online during the session. Dzyabura and Peres (2021) integrated the B-VEP platform to conduct visual elicitation on a broader scale online.

This diversity of modifications indicates that researchers endeavour to optimise ZMET to align it with their specific research contexts and objectives. Modifications also appear to reflect responses to time and resource constraints, whereby focusing on core steps such as Storytelling and Missed Images allows researchers still to obtain rich data regarding participants' metaphors. These variations and modifications reflect the ongoing evolution and adaptability of ZMET, affirming its role as a dynamic and relevant method for addressing contemporary research challenges. Rather than diminishing the essence of ZMET, these modifications arguably enrich and broaden its applicability across diverse research contexts while paving the way for further methodological innovation.

Combination of ZMET with Other Methods

Beyond diverse modifications, the integration of ZMET with other research methods, both qualitative and quantitative, emerges as a significant trend within the analysed studies. Most studies, specifically 29 out of 47 (approximately 62%), combined ZMET with other methods, whilst the remaining 18 (approximately 38%) employed ZMET as the sole method. This tendency suggests that ZMET is frequently positioned as a complementary method, capable of enriching and deepening research findings when utilised alongside other techniques.

Within the domain of qualitative methods, in-depth interviews (8 studies) and Focus Group Discussions (FGDs) (4 studies) were the most frequently combined choices with ZMET. Typically, ZMET functioned as an introductory or deepening technique within the in-depth interview process. For instance, Warden et al. (2021) integrated in-depth interviews with photo guidance inspired by ZMET principles to investigate the relationship between servicescapes and

the private self. This combination allowed the researchers to delve deeper into the participants' perceptions and experiences elicited through ZMET. ZMET was also combined with field observation (2 studies) and ethnography (2 studies). For example, Xiang et al. (2022) combined ZMET with video ethnography and semi-structured interviews to investigate COVID-19 prevention rituals in hotels. In this instance, ZMET was instrumental in revealing the meaning and emotions associated with these rituals, whilst ethnography and interviews provided context and a more holistic understanding of the practices and experiences studied.

Surveys were the method most frequently integrated within the quantitative domain with ZMET (4 studies). Generally, ZMET was applied during the initial research phase to construct survey instruments or interpret survey findings more deeply. Ayala et al. (2019) utilised ZMET in the initial stage to develop a questionnaire, which was subsequently analysed using SEM-PLS to understand Brazil's image. Ji et al. (2021) and Wang et al. (2022) also employed ZMET to develop conceptual frameworks that were then tested using surveys and SEM. In these contexts, ZMET contributed to identifying relevant constructs and propositions for quantitative testing.

Furthermore, ZMET was also integrated with various analytical methods to enrich data interpretation. Grounded theory was applied in 6 studies, enabling researchers to build a theory firmly rooted in the richness of the ZMET qualitative data. Thematic analysis was utilised in 11 studies, and content analysis in 6. Both methods played a role in systematically identifying, categorising, and interpreting the patterns and themes emerging from the ZMET data. Meanwhile, narrative analysis was applied in 2 studies to examine the narratives and stories constructed by participants through their chosen images, providing a deeper understanding of how participants made sense of their experiences.

Integrating ZMET with the methods above reflects researchers' efforts to analyse and interpret ZMET data more comprehensively. Additionally, there were combinations of ZMET with more specific approaches, such as hermeneutics in the study by Joy et al. (2020) on wine tasting, means-end chain and Hierarchical Value Map (HVM) analysis in the research by Garg and Chhikara (2019) concerning the meaning of flowers; word frequency analysis in the study by Wei et al. (2022) on sense of place; three-level image metaphor decoding in the study by Liu et al. (2023) regarding the emotional design of electric vehicles; and fuzzy-set Qualitative Comparative Analysis (fsQCA) in the research by Sun et al. (2023) on public culture construction.

The primary motivation behind integrating ZMET with other methods is data triangulation. By combining diverse data sources and methods, researchers can enhance the validity and reliability of their findings. For instance, integrating ZMET with surveys permits

the quantification of ZMET's qualitative findings and testing relationships between variables in more representative samples. Meanwhile, combining ZMET with other qualitative methods, such as in-depth interviews and FGDs, facilitates a deeper exploration of the meaning and interpretations provided by participants. Furthermore, using analytical methods like grounded theory, thematic analysis, and content analysis assists researchers in identifying and interpreting the patterns and themes emerging from ZMET data more systematically and structurally.

Overall, the prevalence of integrating ZMET with other methods confirms its flexibility and adaptability within diverse research designs. By combining ZMET with appropriate methods, researchers can obtain a deeper, richer, and more valid understanding of the phenomenon under investigation while strengthening their research's theoretical and methodological foundations. This trend also indicates that ZMET is not viewed solely as a stand-alone method but as part of a broader methodological repertoire that can be utilised synergistically to address complex research questions.

Thematic Analysis

Thematic analysis of the 47 studies utilising ZMET within the 2019–2023 period identified five principal themes: (1) Experience and Emotion, (2) Meaning and Perception, (3) Identity and Self, (4) Values and Beliefs, and (5) Decision-Making. This analysis demonstrates how ZMET can effectively access and uncover hidden layers of meaning beneath surface awareness, providing a more holistic and profound understanding of the phenomena investigated.

Experience and Emotion

Several studies highlighted the efficacy of ZMET in exploring complex and embodied dimensions of experience and emotion, which are often challenging to articulate verbally alone. In the context of wine tasting, for instance, Joy et al. (2020) employed ZMET to reveal the sensory, emotional, and cognitive dimensions involved in wine appreciation. Their study demonstrated how the wine stimulus, tasted by participants during the ZMET session, could trigger and articulate embodied experiences. Meanwhile, Xiang et al. (2023) applied ZMET to explore the *communitas* experience of 'glampers', revealing how the method could access transformative experiences and collective feelings of connection. Within the healthcare context, Back et al. (2023) demonstrated how ZMET can be utilised to understand and communicate the complex emotional experiences of patients and caregivers in palliative care. Furthermore, in a marketing context, Valenzuela et al. (2022) applied a ZMET-inspired projective technique to uncover the emotional ambivalence experienced by consumers towards brands they detested. The application of ZMET can be framed by Embodied Cognition theory (Varela, Thompson, & Rosch, 1991), which proposes that thinking is connected to the body's physical experiences in

the world. According to this theory, emotions and understanding are shaped by sensory input and physical actions. By using images and sensory prompts, ZMET is designed to access these non-verbal, bodily-based forms of knowing, which allows participants to express understanding that is grounded in sensation rather than purely verbal reasoning. These studies, collectively, affirm ZMET's capability to uncover and represent the rich and multidimensional nature of human experiences and emotions, which are frequently difficult to access via traditional research methods.

Meaning and Perception

The theme of meaning and perception emerged as one of the principal domains explored via ZMET. Studies within this category illustrate how ZMET can effectively investigate individual meaning and perception concerning various concepts and phenomena, encompassing both abstract and concrete aspects. For example, Mauri (2020) utilised ZMET to examine the meaning of sustainability amongst individuals concerned with environmental issues, finding that sustainability was construed as an equilibrium between human needs and environmental preservation. In an urban context, Truong (2020) applied ZMET to understand student perceptions of a 'liveable city', which was associated with green spaces, adequate infrastructure, and a sense of security. Meanwhile, Jung et al. (2021) demonstrated how ZMET could be employed to explore consumer perceptions of luxury fashion displayed via Virtual Reality (VR), highlighting VR's role in enhancing perceptions of luxury through immersion and sensory stimulation. In a different context, Da Rosa et al. (2022) adapted ZMET to investigate children's perceptions of food consumption, discovering that their perceptions were influenced by factors such as taste, health, and family influence. Furthermore, Owoseni (2023) used ZMET to investigate the meaning of digital transformation amongst small and medium-sized enterprise (SME) owners in Nigeria. This aligns with Schema Theory from cognitive psychology (Ghosh & Gilboa, 2014), which proposes that individuals organize knowledge and interpret new information through mental frameworks or 'schemas'. The ZMET method is used to understand the underlying frameworks of thought that individuals hold. The metaphors and images selected by participants serve as tangible expressions of their internal perspectives, revealing how they structure their understanding of complex concepts like 'sustainability' or 'luxury'. These studies demonstrated the method's application in mapping the nuanced and detailed nature of individual meaning and perception.

Identity and Self

The themes of identity and self also constituted a significant focus in several ZMET studies. These studies demonstrate how ZMET can be employed to explore and understand how individuals construct, negotiate, and represent their identities across various social and cultural

contexts. For instance, Cruz and Buchanan-Oliver (2020) applied a ZMET-inspired technique to investigate the ambivalence experienced by South-East Asian migrants in New Zealand during acculturation and their efforts to maintain their original cultural identity. Their findings illustrate how ZMET can assist in uncovering the identity conflicts experienced by individuals within the context of migration and cultural adaptation. In the context of *servicescapes*, Warden et al. (2021) utilised in-depth interviews with photo guidance adapted from ZMET to explore how physical and social environments influence how individuals present themselves in public spaces and negotiate their private self-identity. Meanwhile, within the context of human brands, Noh et al. (2023) demonstrated how ZMET could be used to understand how human brands mobilise their identities and values to advocate for social issues. The ZMET process can be understood in the context of Narrative Identity theory (McAdams & McLean, 2013), which proposes that individuals create a sense of self by developing an ongoing personal narrative. The creation of a final summary image or collage, a step in the ZMET process, involves participants assembling a visual representation of their identity related to a topic. The central metaphors identified in this process function as core elements in this personal narrative, illustrating how a coherent sense of self is constructed. These studies affirm ZMET's potential for investigating the construction and negotiation of self-identity within both individual and collective contexts.

Values and Beliefs

Several studies employed ZMET to reveal the values and beliefs held by individuals, which are frequently implicit and challenging to articulate directly. Karatzas et al. (2019) utilised ZMET to investigate how consumers of luxury goods in Taiwan consider ethical values within their purchasing decisions. They found that whilst luxury remains a priority, there were indications of a value shift whereby consumers increasingly considered ethical aspects in their consumption choices. Within the context of religion, Yoo et al. (2022) employed ZMET to understand the values embedded within the practice of pilgrimage for Korean Protestant Christian pilgrims. Their study revealed that pilgrimage was construed as a journey possessing spiritual, social, and transformative value, reflecting ZMET's capacity to access transcendent and intangible values. The ZMET method's focus on underlying values can be related to Moral Foundations Theory (Graham et al., 2013), which proposes that morality is grounded in a set of intuitive foundations (e.g., care, fairness, loyalty). These foundations are described as often operating outside of conscious reasoning. As ZMET utilizes metaphorical and visual prompts rather than direct questioning, it provides a means to explore these intuitive, emotionally-driven foundations that are thought to influence an individual's stated beliefs and values. These findings indicate that ZMET constitutes an effective tool for revealing and representing the values and beliefs underpinning individual behaviour and decision-making.

Decision-Making

Decision-making, particularly the subconscious factors that influence it, was a central focus in several studies utilising ZMET. For instance, Ji et al. (2021) applied the method to investigate factors influencing the travel intentions of Chinese tourists, finding that the interplay between internal motivations and destination appeal plays a crucial role. In the context of pro-environmental behaviour, Wang et al. (2022) integrated ZMET with Structural Equation Modelling (SEM) to understand how situational environmental education could influence tourists' environmentally responsible actions. Their study demonstrated how ZMET can be employed to uncover the values and beliefs underpinning such behaviour, which were subsequently tested for correlations with other variables using SEM. These findings can be contextualized using Dual Process Theory, as described by Kahneman (2011), which distinguishes between two modes of thinking: one that is fast, intuitive, and emotional (System 1), and another that is slow, deliberate, and logical (System 2). The ZMET approach is oriented towards exploring the automatic and emotional responses associated with System 1, which are considered to play a significant role in decision-making. The method can provide insight into the underlying reasons for a choice, particularly those not easily articulated through conscious reasoning. Collectively, these studies illustrate how ZMET contributes to a more comprehensive understanding of decision-making by highlighting subconscious factors often inaccessible through traditional research methods.

Conclusion of Thematic Analysis

Overall, this thematic analysis affirms that ZMET is a potent and versatile method for exploring and uncovering deeper, more complex layers of meaning associated with individual experience, perception, identity, values, and decision-making. ZMET's capacity to access subconscious aspects, often challenging to articulate verbally, provides a unique and valuable contribution to qualitative research. These findings underscore the potential for ZMET to be applied across diverse academic fields to cultivate a more holistic and profound understanding of various phenomena involving human behaviour and experience complexities.

Discussion

Trends in ZMET Utilisation

Analysis of the 47 publications within the 2019–2023 period suggests dynamic trends in utilising ZMET, carrying significant implications. On the one hand, the quantitative stability of studies applying ZMET, ranging between 8–10 publications per annum, indicates this method's consistency and established nature within the repertoire of qualitative research. On the other hand, the expansion of ZMET into diverse academic disciplines and geographical contexts underscores its broadening relevance, extending beyond the boundaries of marketing, which has

historically been its principal domain (cf. Zaltman & Zaltman, 2008). This shift is reflected in the increasing number of studies outside marketing, such as in tourism (e.g., Ji et al., 2021; Xiang et al., 2023), health (e.g., Brault et al., 2021; Back et al., 2023), and education (e.g., Kalkan & Gürses, 2020; Anghelcev et al., 2023). This phenomenon aligns with the growing recognition amongst academics and practitioners (see Pham, 2007; Lerner et al., 2015) that a profound understanding of psychological and emotional aspects, which constitute ZMET's primary focus (Zaltman, 2017), is pivotal for comprehending human behaviour more holistically.

The geographical expansion also serves as a significant indicator of ZMET usage trends. The scope of studies is no longer confined to North America and Europe but has extended into Asia (e.g. Lin & Yeh, 2022; Ma et al., 2023), Latin America (e.g., Da Rosa et al., 2022), the Middle East (e.g., Batu et al., 2023), and Africa (e.g., Owoseni, 2023). This data suggests the growing universal acceptance of ZMET as a cross-culturally valid and reliable qualitative research method (Zaltman, 2003). Nevertheless, the concentration of studies in developed nations still predominates, indicating that further research in developing countries is essential to test the generalisability of findings (Sheth, 2011) and to enrich understanding of the variations and specificities of metaphors that shape perspectives and behaviour across different parts of the world.

Another noteworthy trend is the increasing prevalence of ZMET modification and adaptation, reflecting researchers' creativity in optimising the method (Coulter et al., 2001). Specific examples of ZMET modification include studies on action-based entrepreneurship (Fauchald et al., 2023) and the emotional design of electric vehicles (Liu et al., 2023). Karatzas et al. (2019) employed ZMET to investigate ethical luxury within marketing. These studies illustrate innovative modifications of ZMET to address specific research requirements. Furthermore, the combination of ZMET with diverse other methods, such as in-depth interviews (Warden et al., 2021; Holland, 2023), FGDs (Shearer et al., 2020), surveys (Ji et al., 2021), and grounded theory (Caskey et al., 2020; Jung, 2022), further reinforces ZMET's flexibility and adaptability. This trend towards data triangulation (Denzin & Lincoln, 2018) affirms researchers' commitment to enhancing the validity and reliability of their findings. Notably, the emphasis placed on the Storytelling and Missed Images steps in many ZMET modifications (e.g., Prince et al., 2019; Haneberg & Aaboen, 2022; Xiang et al., 2023) reinforces the position of these two steps as the core of ZMET for uncovering hidden and often subconscious metaphors (Zaltman & Zaltman, 2008).

Strengths of ZMET

As a qualitative research method, ZMET possesses several distinctive strengths that contribute to its effectiveness in revealing a profound understanding of complex phenomena. A

principal strength consistently acknowledged across various studies is ZMET's capability to uncover subconscious thoughts and emotions that are often challenging to articulate verbally (Zaltman, 1997, 2003; Zaltman & Zaltman, 2008). By facilitating the use of visual metaphors as a conduit to access the subconscious realm (Coulter et al., 2001), ZMET has a unique capacity to penetrate rational defence mechanisms and reach deeper layers of meaning embedded within individual cognitive structures (cf. Lakoff & Johnson, 1980; Kövecses, 2010). This advantage proves crucial in understanding diverse, complex phenomena. For example, in the study on wine tasting, Joy et al. (2020) successfully revealed the complex emotional, sensory, and cognitive dimensions constituting the embodied experience. Similarly, the study by Xiang et al. (2023) on the *communitas* experience of 'glampers' and Owoseni's (2023) research on the meaning of digital transformation illustrate how ZMET can uncover and represent individual experiences and perceptions imbued with profound emotional and cognitive nuances.

Furthermore, ZMET's flexibility, allowing for modification and combination with other methods, constitutes a significant strength that broadens its application spectrum. Rather than being constrained by rigid procedures, ZMET will enable researchers to creatively adapt and configure its steps to align with specific research objectives and contexts (Coulter et al., 2001). This flexibility is manifested in the diverse modifications undertaken, ranging from the use of unique and contextual stimuli, such as wine in the research by Joy et al. (2020) and video in the study by Xiang et al. (2022), to adaptation for FGDs (Shearer et al., 2020), through to integration with online platforms (Trabelsi-Zoghalmi & Touzani, 2019; Dzyabura & Peres, 2021). ZMET's capacity to adapt to technological advancements and dynamic research requirements reinforces its status as a future-proof method that remains relevant in the digital era (Zaltman, 2017).

Another equally crucial strength is ZMET's suitability for application across diverse research contexts and populations. This review found that ZMET has been effectively applied in various fields, from marketing (Zaltman & Coulter, 1995) and tourism (Ji et al., 2021) to health (Back et al., 2023) and education (Kalkan & Gürses, 2020), and with diverse participant groups, including consumers, tourists, patients, students, and migrants (Cruz & Buchanan-Oliver, 2020). The success of ZMET in revealing relevant and meaningful metaphors across these varied contexts and populations indicates its inherent cross-cultural validity and reliability (cf. Zaltman, 2003).

Finally, the depth and richness of the qualitative data generated via ZMET represent a distinctive strength that differentiates it from other research methods. The in-depth interview process, focusing on the stories, emotions, and associations evoked by participants' chosen images (Zaltman, 1997), yields data that are rich, nuanced, and meaning-laden (Zaltman &

Zaltman, 2008). This data richness not only facilitates a holistic understanding of the phenomenon under investigation but also presents opportunities for analysis using diverse methods, such as grounded theory (Caskey et al., 2020), thematic analysis (Braun & Clarke, 2013), and narrative analysis (Xiang et al., 2023). Consequently, ZMET produces data that are rich and amenable to processing and interpretation through various analytical frameworks, which further strengthen and deepens the research findings.

Weaknesses of ZMET

Whilst ZMET offers significant strengths in eliciting profound understanding, several inherent limitations in its design and implementation warrant critical consideration. One principal weakness frequently highlighted is the requirement for substantial time and resources (Zaltman & Coulter, 1995; Zaltman & Zaltman, 2008). The data collection process, typically involving in-depth interviews lasting 1–2 hours per participant, demands a significant investment of time from both researchers and participants (Coulter et al., 2001). Furthermore, the complex and multi-layered nature of ZMET data analysis (cf. Christensen & Olson, 2002) necessitates specific expertise in qualitative data interpretation and metaphor identification (Zaltman, 1997), expertise that all researchers may not possess. This is not merely a logistical hurdle; it has direct implications for scientific rigour, often restricting studies to smaller, more homogeneous samples. This can limit the transferability of findings and poses challenges for researchers working under tight budget or time constraints.

A more fundamental challenge lies in the inherent subjectivity of data interpretation. While qualitative research embraces interpretation, ZMET's reliance on metaphor analysis makes it particularly susceptible to researcher bias (Coulter et al., 2001). There is a significant risk of confirmation bias, where researchers may unconsciously project their own theoretical assumptions onto the data, 'finding' metaphors that align with their expectations. While strategies like triangulation and member checking are employed to mitigate this, they do not eliminate the epistemological challenge. Therefore, the credibility of ZMET findings rests heavily on the researcher's reflexivity and the transparency of the analytical process, which must be explicitly detailed to allow for critical evaluation by the scientific community.

Furthermore, participant recruitment can introduce sampling biases. The demanding nature of the ZMET process—requiring time, cognitive effort, and a willingness to be introspective—may attract a specific type of participant who is inherently more articulate or reflective (Coulter et al., 2001). This self-selection bias can impact the representativeness of the sample and skew the resulting metaphorical landscape. Finally, ZMET's focus on eliciting memories and deeply held beliefs (Zaltman, 2003) means its findings are often a reflection of past experiences rather than a direct predictor of future behaviour. Researchers must therefore

be cautious in extrapolating findings to predict future actions, framing them instead as a deep diagnostic of current mental models shaped by the past. These weaknesses do not invalidate ZMET but highlight the critical trade-offs researchers must navigate when choosing this powerful but demanding method.

Implications, Recommendations, and Limitations of the Review

From this systematic review, several key implications emerge for researchers. Firstly, our findings reaffirm that ZMET is not merely a marketing tool but a versatile method with significant potential for disciplines such as psychology, health, and education dedicated to exploring deep-seated human motivation and experience. Secondly, the widespread adaptation and modification of ZMET highlight its flexibility, suggesting that researchers should approach it not as a rigid protocol but as an adaptable framework for methodological innovation.

Based on these implications and the identified gaps in the literature, this review outlines a research agenda to advance ZMET's application and impact:

1. Expanding ZMET's Application to Under-Researched Areas.

Future studies should strategically apply ZMET to domains where deep-seated, unarticulated beliefs are critical. Specific areas ripe for exploration include:

- **Public Policy and Social Issues:** Exploring public perceptions of complex topics like climate change, vaccine hesitancy, or mental health stigma, where subconscious metaphors can reveal underlying barriers to engagement.
- **User Experience (UX) for Emerging Technologies:** Understanding the emotional and metaphorical relationships users form with AI, virtual reality, or smart home devices, moving beyond simple usability metrics.
- **Cross-Cultural and Non-WEIRD Populations:** Systematically applying and validating ZMET in non-Western, Educated, Industrialized, Rich, and Democratic (WEIRD) contexts to test the universality of certain metaphors and adapt the technique for diverse cultural backgrounds.

2. Advancing Methodological Rigor and Innovation.

To address ZMET's known limitations and enhance its robustness, we recommend focusing on the following methodological innovations:

- **Integration with Technology:** Developing digital ZMET platforms for remote data collection and utilising AI-powered tools (e.g., Natural Language Processing) for the preliminary analysis of transcripts to reduce time demands and identify emergent metaphorical patterns.
- **Combination with Quantitative and Biometric Data:** Triangulating ZMET findings with quantitative surveys or biometric data (e.g., eye-tracking during image selection,

galvanic skin response during interviews) to add a layer of objective validation to subjective interpretations.

- Developing Standardised Protocols and "ZMET-Lite" Versions: Creating more standardised guidelines for reporting ZMET studies to improve transparency and comparability. Additionally, developing abbreviated "ZMET-lite" versions could make the method more accessible for projects with limited time and resources, such as in agile research environments.

This review affirms that ZMET is a vital method whose contribution to a deeper understanding of humanity will continue to evolve. By pursuing this research agenda, scholars can harness the full potential of ZMET to generate new insights, address its limitations, and drive the advancement of knowledge across multiple fields.

Although this review provides a comprehensive analysis, several limitations must be acknowledged. Firstly, the scope was confined to English-language publications between 2019 and 2023, potentially omitting relevant studies published in other languages or outside this timeframe. Secondly, our search strategy, while thorough, may not have captured all relevant articles due to keyword variations. Thirdly, this review focused on methodological aspects and did not conduct an in-depth analysis of the substantive findings from each study. These factors may limit the generalisability of our conclusions, and readers are encouraged to consult the original studies for a more complete understanding.

CONCLUSION

This systematic review of 47 studies from 2019 to 2023 indicates that the Zaltman Metaphor Elicitation Technique (ZMET) is an adaptable and increasingly interdisciplinary method for exploring non-conscious aspects of human experience. The findings suggest that ZMET functions as a flexible framework rather than a fixed protocol, allowing researchers to tailor its application to investigate nuanced psychological questions not easily addressed by quantitative measurement or other qualitative approaches. This adaptability may explain the method's expansion beyond its origins in marketing into complex research areas such as identity negotiation, the experience of chronic illness, and emotional responses to emerging technologies. Our analysis shows its application in uncovering thoughts and emotions that are not easily verbalized, while also noting limitations related to resource intensity and analytical subjectivity.

The review documents the method's recent development, characterized by its expansion into new fields and its adaptation to different research questions. The proposed research agenda—including application in new domains, enhancement of methodological rigor, and integration with technology—suggests potential directions for future work. In conclusion, this

review documents ZMET as a tool used in qualitative research that contributes to the understanding of the internal factors that influence human behaviour.

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