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Item Type	Conference paper
Authors	Singh, P.;Jayawardena, Nirma S.
Citation	Singh P and Jayawardena N (2025) Beyond the Hype: Challenges of Implementing AR Marketing in Developing Economies. Empowering Leaders for Global Contemporary Businesses. 27-29 Oct 2025. Manchester, UK.
Download date	2026-04-13 04:49:26
Link to Item	https://bradscholars.brad.ac.uk/handle/10454/20816

Beyond the Hype: Challenges of Implementing AR Marketing in Developing Economies

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Abstract:

This scoping review aims to apply the Arksey O'Malley framework to identify the dark side of using Augmented reality (AR) marketing in emerging economies. An effective search strategy was developed to identify relevant studies and literature on the dark side of AR marketing in emerging economies. The Web of Science academic database was utilized to gather relevant literature. The thematic analysis was carried out to identify prevalent themes in the literature on the dark side of using Augmented reality (AR) marketing in emerging economies. The four notable identified themes were, namely, consumer privacy concern, over-dependency on foreign technology, non-consideration of cultural norms and sensitivities, and lack of local expertise. Despite contributing to the literature, this scoping review is constrained in its area of inquiry due to the seven-year timescale, which reviewed research findings published between 2018 and 2024. Firms need to determine whether to offer AR functionality based on the characteristics of the products that they sell in developing economies.

Keywords: Augmented Reality Marketing; Arksey O'Malley framework; Dark side; Emerging Economies; Scoping review.

1. Introduction

Modern businesses have been employing these immersive technologies in diverse business and marketing activities (Chu et al., 2025; Singh, 2024; Kamboj and Sharma, 2023). The rapid growth of AR, VR, and MR uses in marketing has been driven by technological disruptions in motion sensors, digital displays, computing, and computer vision (Spais and Jain, 2025). This made diverse emerging technologies applications in marketing such as AR marketing much more immersive and engaging for users (Wedel et al., 2020). AR marketing signifies a new, disruptive, subfield within the marketing stream (Rauschnabel et al., 2019). AR marketing may lead to several negative consequences such as harming brand equity (Rauschnabel et al., 2019), affecting consumer choice (Meißner et al., 2020), privacy concerns (Cowan et al., 2021), negative consumer perceptions (Oyman et al., 2022), and negative consumer response (Yim and Park, 2019). This study uses Arksey and O'Malley's (2005) five-stage approach to provide a full-scoping review of the dark side of Augmented Reality (AR) marketing in emerging economies. This scoping review helps scholars, researchers, practitioners, and policymakers navigate the dark side of AR marketing in emerging economies.

2. The Dark Side of Augmented Reality Marketing

AR has various marketing benefits for customers and retailers (Rumokoy and Frank, 2025). For example, studies demonstrated AR apps deliver pleasant consumer experiences leading to positive behavioral responses using AR as a marketing tool (Jiang and Lyu, 2024; Kim et al., 2023; Gatter et al., 2022, Kowalczyk et al., 2021; Park and Yoo, 2020), AR marketing enhance consumers' perceived inspiration (Schultz and Kumar, 2024; Jung et al., 2021; Hinsch et al., 2020), AR marketing assists consumers to make suitable buying decisions (Nugroho and Wang, 2023; Sharma et al., 2023; Flavián et al., 2019), and AR marketing boost customer engagement (Kumar et al., 2024; Jessen et al., 2020; McLean and Wilson, 2019). Even though the application of AR in marketing is mounting, the acceptance of AR as an effective marketing tool in designing marketing processes and inventing unique customer experiences has not increased in line with contemporary marketing trends (Rauschnabel et al., 2022; Hinsch et al., 2020; Flavián et al., 2019).

When using AR marketing in emerging economies should consider the following dark side or negative consequences or bad impacts, namely, harming brand equity (Rauschnabel et al., 2019), affecting consumer choice (Meißner et al., 2020), privacy concerns (Cowan et al., 2021), negative consumer perceptions (Oyman et al., 2022), and negative consumer response

(Yim and Park, 2019). However, few studies examine the dark side of AR applications in the marketing field (Du et al., 2022; Lim et al., 2021; Smink et al., 2020). Hence, there is a need for further research studies employing the scoping review to disclose the dark side of using AR marketing in emerging economies. This scoping review aims to address this stated research gap by systematically charting and integrating the pertinent literature on the dark side of using AR marketing. Thus, the study contributes to the body of knowledge by delivering valuable insights for recognizing and mitigating AR marketing's negative consequences on consumers and businesses, particularly in emerging economies.

3. Methodology

There are several research methodologies for conducting literature review-based studies, for instance, systematic literature review, theory-based review, bibliometric analysis, theme-based review, scoping review, meta-analysis, etc. (Singh et al., 2023; Paul et al., 2023; Singh et al., 2022; İpek, 2018). A systematic literature review is deliberated as a central approach to synthesizing the results of a given body of studies (Paul et al., 2023). Arksey and O'Malley proposed the scoping review approach which is used to perform the systematic procedure for searching and summarising the literature, having five stages i.e., defining the research question, identifying relevant studies, selecting studies, charting data, and summarizing and reporting the results (Levac et al., 2010; Arksey and O'Malley, 2005). Scoping reviews, as their name hints, are standard for deciding the scope of literature and studies available on a specified subject and providing an outline of its convergence (Persohn and Branson, 2025). However, systematic literature reviews differ from scoping reviews in numerous ways. For instance, systematic literature reviews are employed to tackle more specific research questions. On the other hand, scoping reviews can be performed to detect a research theme for a future systematic literature review. Secondly, systematic reviews can be referred to as hypothesis-testing, while scoping reviews can be referred to as a hypothesis-generating exercise (Arksey and O'Malley, 2005). Hence, the study chose a scoping review approach based on the comparison to a systematic literature review as it grants a wider and more investigative method to chart a diverse type of evidence on a research topic of interest (Arksey and O'Malley, 2005).

3.1 First Step: Identifying the Research questions

Two research questions (RQ) were identified to lead this study and accomplish its purpose to ensure augmentation of existing theoretical understandings on this research domain namely, RQ1: What is the present status of scholarly research on the Dark side of using AR Marketing Strategies in Emerging Economies? RQ2: What are the AR Marketing strategies contributing to the Dark side of Emerging Economies? Figure 1 shows the inclusion and exclusion criteria.

3.2 Second Step: Identifying Relevant Studies

Identifying relevant studies is the foundation of a good study which contributes to the body of knowledge. For this study, search keywords were formulated as per the research objectives and in line with the two identified research questions, following the second step as per the scoping review framework of Arksey and O'Malley (2005).

3.3 Third Step: Selection of the Studies

The third step outlines the selection of the studies, and a general idea of the preliminary search results using search keywords based on the search employing the Web of Science and Scopus databases. The article search process was performed on 15th June 2024. The search keywords used to extract pertinent articles were: ("Augmented Realit* Marketing Strateg*" OR "Augmented Realit* Marketing" OR "AR Marketing Strateg*" OR "AR Marketing") AND ("Dark side*" OR "bad effect*" OR "bad side*" OR "consequence*" OR "negative consequence*" OR "impact*" OR "Influence" OR "bad impact*" OR "negative influence*" OR "bad effect*" OR "dark side effect*" OR "side effect*" OR "Disadvantage*" OR "Demerit*"). 48 records were displayed as the preliminary search results. The PRISMA (The Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 guidelines were incorporated to remain within the scope of the study (Liberati et al., 2009).

3.4 Fourth Step: Data Charting and Collation

This scoping review consists of 24 studies based on inclusion and exclusion criteria. The PRISMA 2020 guidelines have been employed to find the most topical and pertinent research gaps in scholarly research on the dark side of using AR marketing strategies in emerging economies.

3.5 Fifth Step: Summarising and Reporting Findings

Summarizing and reporting findings is the fifth and last step of Arksey and O'Malley's (2005) scoping review. Figure 1 presents the flowchart of the literature search process.

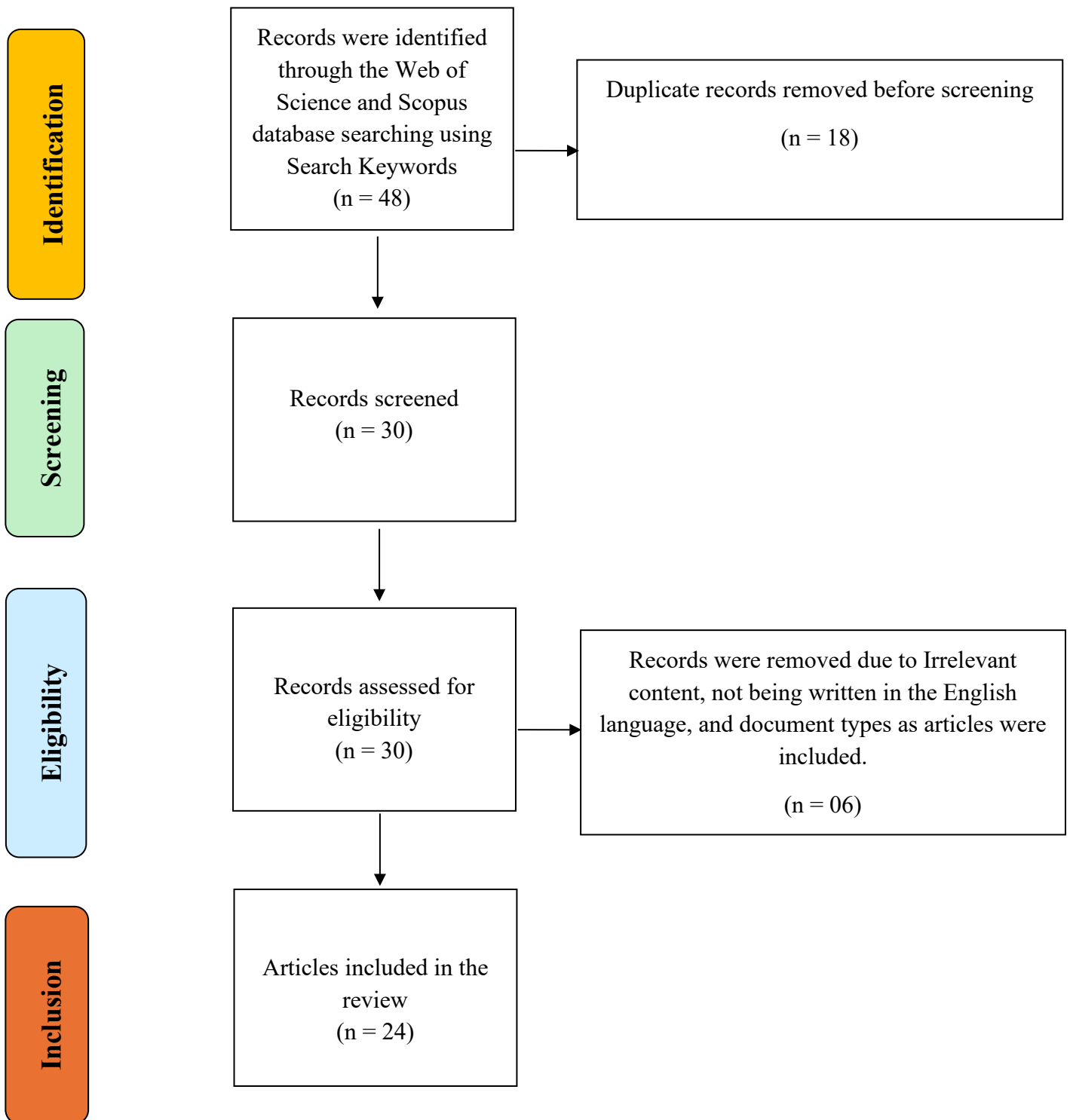


Figure 1. Flow chart of the literature search process

Source: The Authors' own.

4. Thematic analysis

4.1 Consumer privacy concern

Emerging economies do not have data privacy regulations or mechanisms to implement them (Kumar, 2022). AR marketing allows firms to collect, store, and potentially abuse personal information (Kumar, 2022). Rachnabel et al. (2019), Chylinski et al. (2020), and Ng and Ramasamy (2018) all agree that augmented reality has given marketers new possibilities to interact with their customers. This allows for the creation of more engaging and interactive advertising campaigns, which in turn increase consumer involvement and positive associations with the brand (Hinsch et al., 2020; Kumar, 2022).

4.2 Over-dependency on foreign technology

Emerging economies frequently depend on technology created by foreign corporations, which can lead to future vulnerability and reliance (Plotkina et al., 2022; Chen et al., 2022; Chen and Lin, 2022). Due to this dependence, the growth of domestic technology sectors may be constrained, and local economies may lack control over their digital infrastructure and data consequence of this dependency (Plotkina et al., 2022; Chen et al., 2022; Chen and Lin, 2022). Relying on foreign technology for Augmented Reality (AR) marketing in developing economies has numerous obstacles and hazards that could have substantial consequences for businesses and customers in these nations in the future (Gatter et al., 2022; Ivanov et al., 2023; Barta et al., 2023).

4.3 Non-consideration of Cultural norms and sensitivities

AR marketing campaigns, in conjunction with recommending functions, have the potential to bridge the gap between physical stores and online buying, thereby facilitating multi-channel purchasing opportunities (Chen et al., 2022). This is especially true when the recommendations include items from the vendor's online catalogue (Chen et al., 2022; Plotkina et al., 2022).

4.4 Lack of local expertise

The dominance of foreign AR technology may result in a paucity of local expertise (Gatter et al., 2022; Ivanov et al., 2023). Ivanov et al. (2023) assert that local institutions and training programs will be compelled to continue relying on foreign experts, which will further impede local innovation if they fail to prioritize the learning of augmented reality technology. Since foreign augmented reality (AR) technology is so popular, there may not be enough local

experts (Zhu et al., 2023). In the absence of local educational institutions and training programs that prioritize the development of AR skills, the region will continue to depend heavily on foreign expertise in the future (Zhu et al.,2023).

5. Discussion of the findings

The literature indicates that there are some concerns regarding privacy and the sharing of personal information (Kumar, 2022; Smink et al., 2020). Rauschnabel et al. (2019) explored how privacy risk affects AR smart glass adoption. Researchers concluded that threats to others' privacy are among the most crucial elements influencing a person's actions. AR makes traditional ads more memorable by making them interactive (Chu et al., 2025). Digitally illiterate users may not realise how much data AR apps collect or the threats (Hinsch et al., 2020). AR shopping apps are helping companies bring their storefronts to customers, changing the shopping experience (Pandey and Pandey, 2025). These apps also allow consumers to virtually test clothes and makeup from home, altering the concept of place in marketing. Foreign AR technology may dominate local expertise (Gatter et al., 2022; Ivanov et al., 2023). Unless local educational institutions and training programs place a high priority on developing skills in augmented reality technology, local innovation will be further limited because of foreign expertise (Ivanov et al., 2023). Due to foreign augmented reality (AR) technology dominance (Zhu et al., 2023), there may be a shortage of local expertise.

6. Implications, limitations, and conclusion

This study explains how AR marketing methods darken emerging economies and suggests that the integration of AR technologies in the context of emerging economies needs careful alignment, as cultural differences in symbolism, colours, and gestures can lead to confusion or miscommunication, reducing the effectiveness of the campaign (Au et al., 2023; Qin et al.,2024). There will be a shortage of local expertise due to foreign technology dominance when it comes to AR marketing strategies (Zhu et al., 2023). Having a constant reliance on imported technology can stifle local innovation and impede the development of a robust domestic technology sector (Schultz and Kumar, 2024).

Disclosure statement

The author(s) reported no potential conflict of interest.

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