

FUTURE RESEARCH DIRECTION ON BRANDED APPS: A BIBLIOMETRIC ANALYSIS

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Abstract

This study aims to examine the development of branded mobile application research using computational bibliometric analysis. The collection of article data was obtained from the Google Scholar database and the reference publish or perish software manager. In the process of searching for the keyword "Branded Mobile Applications", the author found 984 articles relevant to the time limit used for the last 10 years (2012 to 2021). The results show that branded mobile application research can be separated into 2 terms, including mobile application, and brand app. The results of the analysis of branded mobile application publications in the last 10 years show an increase in the number of publications every year. The highest number of publications is in 2021 as many as 240 articles and the smallest publication in 2012 is 12 articles. This bibliometric analysis provides a summary and potential avenues for future mobile app brand research, as the findings suggest.

Keywords: Bibliometric, Brand applications, Marketing, Mobile applications, Technology.

1. Introduction

The development of communication technology has great potential for organizations to conduct business through mobile applications. The potential of using branded mobile apps is unlike traditional marketing which is designed to drive sales only [1-10]. However, it has much greater potential, among others, to gain a competitive advantage, create value-added services, and facilitate customer engagement with brands [11, 12]. Mobile applications have been suggested as one of the most useful media in new marketing to attract new customers and increase the loyalty of existing customers. This has generated great interest among organizations to expend substantial resources on this technological innovation [13, 14]. Brand applications are software designed on mobile devices that display a brand identity. Branded applications offer a variety of entertainment content and brand information services for users that can be accessed anytime and anywhere [15]. The future of branded mobile apps looks promising. The number of applications downloaded through the Play Store throughout the year exceeded 268 billion users and made the application one of the media's most popular computing for users around the world [16]. But, in academia, it is still uncertain whether research on branded mobile applications is still in great demand or not.

One of the analytical techniques to determine the development of research in the field of branded mobile applications is bibliometric analysis. Bibliometric analysis is defined as a form of mapping research data that can assist researchers in improving the quality of research. Bibliometrics displays the topic area studied, the country of origin of the researcher, and the journal in which the publication was published from articles published in journals and other scholarly works [17]. Research on bibliometric analysis has been carried out by several researchers, including bibliometric analysis in marketing [18] in the field of computer education [19], and in the health sector [20]. However, research on computational mapping of bibliometric analysis of published data in the field of branded mobile applications is still very little. Especially bibliometric analysis with a span of the last 10 years in the period 2012 to 2022 through the VOSviewer application. Thus, this study aims to conduct computational research on mapping bibliometric analysis of articles indexed by Google Scholar using VOSviewer software. This research can be a reference for other researchers to conduct and determine the research themes to be taken, especially those related to the field of branded mobile applications. The novelties of this study are (i) This research investigates brand applications using bibliometric analysis which has not been carried out by other researchers, (ii) This research shows that the research opportunities for branded mobile applications are quite high, such as research related to branded mobile applications for the banking industry, not enough.

2. Method

The article data used in this study is based on research from publications that have been published in Google Scholar-indexed journals. The reason we chose Google Scholar is that the Google Scholar database is open source. To obtain research data, a reference manager application, namely Publish or Perish, is used. Publish or Perish software was used to conduct a literature review on our chosen topic. The research was conducted through 4 stages as follows (Fig. 1). Article data collection using Publish or Perish software the keyword "Branded mobile application" based

on the requirements of the publication title. The filtering of article data limits the years published between 2012 and 2022. Furthermore, the data is collected according to the criteria and then exported into Excel software. VOSviewer is also used to visualize and evaluate research trends. Vosviewer visualization results consist of 3 variations of article data mapping, namely network visualization, density visualization, and overlay visualization

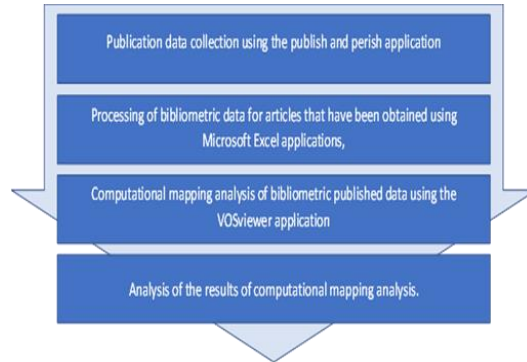


Fig. 1. Stages of bibliometric research

3. Results and Discussion

3.1. Publication data search results

Based on data searching through publish or perish software using the Google Scholar database, 984 article data were obtained that met the research criteria. The data was obtained in the form of article metadata consisting of the author's name, title, year, journal name, publisher, number of citations, and article links. Table 1 shows the sample data taken from as many as 10 of the best articles that have the highest number of citations. The number of citations of all articles used in this study is 29471. All articles have a mean h-index of 52 and a g-index.

3.2. Research development in the field of brand app

Table 2 shows the development of research in the field of branded mobile applications published in Google Scholar-indexed journals. From the number of publications, it can be seen that research on branded mobile applications has been carried out every year and continues to increase every year. The development is also quite significant.

3.3. Visualization of branded mobile app topic areas using VOSviewer

Vosviewer computational mapping is carried out on article data to see the relationship between one term and another which is divided into several existing clusters. Labels are assigned to each term with coloured circles. From the mapping results, the topic of branded mobile applications is divided into 9 clusters, namely:

- (i) Cluster 1 (7 items; red): brand attachment, brand attitude, brand loyalty, brand satisfaction, customer brand loyalty, customer engagement, customer loyalty
- (ii) Cluster 2 (7 items; green): app loyalty, brand recognition, brand reputation, commitment, customer experience, customer loyalty, customer satisfaction

- (iii) Cluster 3 (5 items; blue): brand awareness, gamification, loyalty card, loyalty program, store loyalty
- (iv) Cluster 4 (4 items; yellow): brand personality, engagement, involvement, purchase intention
- (v) Cluster 5 (4 items; purple): brand engagement, brand experience, customer value, e-loyalty
- (vi) Cluster 6 (3 items; purple): brand identification, brand identity, brand app
- (vii) Cluster 7 (3 items; purple): brand equity, brand love, customer loyalty
- (viii) Cluster 8 (3 items; with purple): behavior loyalty, brand image, food delivery app
- (ix) Cluster 9 (3 items; purple): app purchase intention, loyalty, loyalty intention

Table 1. Published data-branded mobile applications.

Author	Title	Year	Cites
Franko and Tirrel	Smartphone app use among medical providers in ACGME training programs	2012	648
Hudson and Thal	The impact of social media on the consumer decision process: Implications for tourism marketing	2013	561
Inman and Nikolova	Shopper-facing retail technology: A retailer adoption decision framework incorporating shopper attitudes and privacy concerns	2017	504
Hofacker et al.	Gamification and mobile marketing effectiveness	2016	433
Ozturk et al.	What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience	2016	406
Ramaswamy et al.	Brand value co-creation in a digitalized world: An integrative framework and research implications	2016	398
Bilgihan et al.	Towards a unified customer experience in online shopping environments: Antecedents and outcomes	2016	365
Hughes et al.	Driving brand engagement through online social influencers: An empirical investigation of sponsored blogging campaigns	2019	359
Grewal et al.	Mobile advertising: A framework and research agenda	2016	351
Rauschnabel et al.	Augmented reality marketing: How mobile AR-apps can improve brands through inspiration	2019	337

Figure 2 shows the relationship between related terms, and terms that are frequently researched and related to the research topic of Branded mobile applications. Author keywords are keywords that usually appear below the abstract to identify the topic of the paper. Brand Loyalty is the most common keyword with the deepest network over the last 10 years. Other important keywords are satisfaction, purchase intention, customer engagement, brand awareness, and experience.

The overlay visualization shows the novelty of research on related terms [21]. Figure 3 shows the overlay visualization in branded mobile app research. Research on branded mobile applications is mostly carried out from 2021 to 2022. Based on Fig. 3, shows that there is still little research on mobile application networks, including banks, brand value, payment, brand awareness, and engagement. This study is in good agreement with previous studies [22-28] for showing the current research trend.

Table 2. Research development of branded mobile applications.

Year	Number of publication
2012	12
2013	22
2014	30
2015	41
2016	55
2017	55
2018	85
2019	120
2020	158
2021	240
2022	166
Total	984

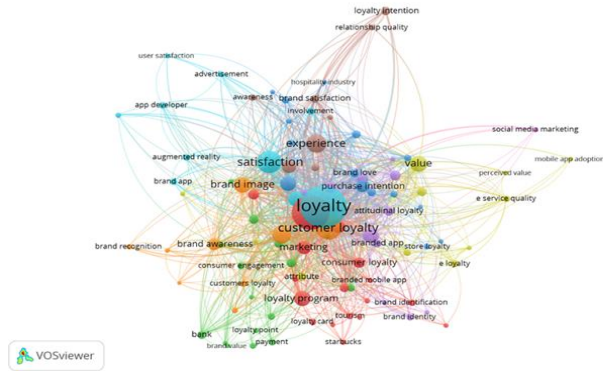


Fig. 2. Visualization of a branded mobile app keyword network



Fig. 3. Overlay visualization of branded mobile apps in 2021-2022

4. Conclusion

The purpose of this study was to perform computational mapping analysis on the bibliometric data of research articles. The research data taken in this study is "branded mobile applications". The articles used are taken from the Google Scholar database via Publish or Perish. The library data used in this study include titles and abstracts. From the search results, as many as 984 relevant articles were published in the range of 2012 to 2021. The results show that research on mobile applications continues to increase in 2019 to 2021. The results show that research opportunities on branded mobile applications still have a fairly high chance. Research related to branded mobile applications for the banking industry is still lacking.

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