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About the Journal

The journal is born out of IMI Bhubaneswar's emphasis on one of the key pillars of its sustenance—research. IMI Bhubaneswar, a young institution with a rich legacy, has always been at the forefront to push the horizons of research awareness within the academic fraternity. The journal aims to serve as a forum for creation and dissemination of knowledge on innovations and its application to solve challenges in business management. The journal is international and interdisciplinary in nature.

The main focus of the journal is to provide a platform to the academicians and practitioners to discuss innovations and their implications on business management and processes. It focuses on bridging the gap between academia and industry for cross fertilization of ideas leading to effective dissemination of innovative solutions in emerging areas. The journal features research papers across function areas on topics such as customer relationship management (CRM); market segmentation; supply chain management; data mining tools & techniques; block chain; artificial intelligence (AI); internet of things (IoT); customer lifetime value (CLV); economics of information technology; cloud applications; cyber security; mobile computing; geographic information systems (GIS); information systems and ethics; sustainability; green computing; digital marketing; social media; social analytics; supplier relationship management; enterprise solutions; virtualization; cognitive science; governance; entrepreneurship; design thinking; VR or augmented based learning and development; HRMS and HR score card; people analytics; automation in performance management; algorithm trading; RegTech; and FinTech.

The journal is primarily an application-oriented journal and therefore invites research papers that are based on evidence and produce findings that are implementable. The journal is impartial towards methodology used as long as it is robust and relevant.

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IMIB Journal of Innovation and Management offers a platform for interface between emerging business management problems and evolving innovative techno-management solutions. It serves as a platform for seamless integration of methodological, technological and disruptive developments, and their business applications. We publish articles which address research in technology, techniques, processes and applications in business. The journal, therefore, bridges the gap between academia and industry for cross fertilization of ideas leading to effective dissemination of developments in emerging areas.

IMIB Journal of Innovation and Management is an interdisciplinary journal in the area of business management which captures developments in technology to facilitate application in business. The journal facilitates dissemination of knowledge on shifting techno-management paradigms and maps its cascading consequences on various facets of business (Marketing, Finance, OB HR, Operations, Strategy, Entrepreneurship, etc.). We encourage research that investigates the impact of innovations on various stakeholders such as customers, vendors, partners, etc. In pursuit of this endeavor, we publish scholarly research as well as practice papers offering unique insights.

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Contents

Original Articles

- Exploring the Impact of Buying Dimensions on Purchase Intention 143
Gaurav Soin, K. S. Thakur, Rajendra K. Khatik and Nischay K. Upamannyu
- Linking Accessibility, Easiness and Satisfaction of Users for Public Service Deliveries Through ICTs: Do Amenities Make Things Better? 167
Rajiv Kumar, Pawan Kumar and Sanehal Arya
- Mapping the Evolution of Sensory Marketing: A Bibliometric Analysis 185
Rupa Rathee, Monika and Pallavi Rajain
- A Bibliometric and Literature Review on Unconventional Work Arrangements: Moonlighting 212
Vandana Sharma and Rajani
- Towards an Integrated Framework of Antecedents and Outcomes of Organisational Ambidexterity 229
Suman and B. K. Punia

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Exploring the Impact of Buying Dimensions on Purchase Intention

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Abstract

The present research is a portrayal to examine the impact of financially independent mothers' prior product knowledge and information search on their purchase intention of nourishment products for their children. The research is empirical in nature, and the sampling element is financially independent mothers. Mothers who are part of a couple or a family may need to consult with their partner or other family members before making a purchase, making it more difficult to understand their intentions. On the other hand, financially independent mothers have more autonomy and can make decisions more quickly and easily. Non-probability purposive sampling techniques were used to approach the target population. The findings of the present study demonstrate that prior product knowledge and information search influence the purchase intention for nutrition products in the context of financially independent mothers. The study's implications are multifaceted and offer valuable insights for marketers, policymakers, healthcare professionals and brands targeting mothers and children in the nourishment product market.

Keywords

Prior product knowledge, information search, purchase intention, health, nutrition

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Introduction

Maintaining a balanced dietary intake is paramount for promoting overall well-being and optimal health. Food serves as a vital source of energy, protein, essential fats, vitamins and minerals essential for survival, growth and efficient bodily functions. Ensuring an appropriate balance of nutrients necessitates the incorporation of a diverse range of meals into our diets. This is particularly crucial for school-age children, whose bodies are undergoing rapid development, requiring essential nutrients and energy for both physical growth and cognitive learning. To meet their nutritional needs, children must consume a variety of foods from each food group. However, various factors, such as food availability at home and school, peer influence and media exposure, significantly impact children's dietary decisions.

Poor nutrition can have detrimental effects on both the well-being and educational potential of school-age children. Optimal nutrition involves consuming three nutritious meals per day, along with two healthy snacks, while minimising the intake of high-sugar and high-fat foods. Adequate intake of fruits, vegetables, lean meats and low-fat dairy products, including calcium-rich foods like milk, cheese or yogurt, is crucial for preventing various health issues such as obesity, diabetes and bone-related problems. Given the importance of nutrition in supporting children's growth and development, particularly during the school years, understanding factors influencing mothers' intentions to purchase healthy nutrition products for their children is essential.

The current study aims to investigate how the purchase intentions of financially independent mothers are influenced by their prior product knowledge and information search behaviour. By exploring these factors, we seek to gain insights into the decision-making process of mothers when selecting nutrition products for their children, thereby contributing to the promotion of healthier dietary choices among school-age children.

Prior product knowledge is the knowledge that mothers have about nourishment products before they start searching for information. This knowledge can come from a variety of sources, such as personal experience, word-of-mouth or advertising. The role of prior product knowledge in purchasing nourishment products for children is twofold. First, it can influence the mothers' decision of whether or not to purchase a particular product. Mothers with positive prior knowledge about a product are more likely to purchase it, while mothers with negative prior knowledge are less likely to purchase it. Second, prior product knowledge can influence the mothers' search for information about a product. Mothers who have little prior knowledge about a product are more likely to engage in active information searches, such as reading labels, comparing prices and reading reviews. Mothers who have more prior knowledge about a product are more likely to rely on their knowledge and experience when making a purchase decision.

Information search is the process of gathering information about a product or service before making a purchase decision. Mothers often engage in information searches when purchasing nourishment products for their children. There are many different nourishment products on the market, and it can be difficult to

know which ones are the best. By engaging in information search, mothers can learn about the different options available and make an informed decision. Mothers want to make sure that the nourishment products they purchase are of high quality. By engaging in information search, mothers can learn about the quality of the products, such as the ingredients, manufacturing process and safety standards. Mothers often turn to other mothers for advice when making purchase decisions. By engaging in information searches, mothers can read reviews from other mothers and get their opinions on different nourishment products. Mothers are budget conscious and want to find the best deals on nourishment products. By engaging in information search, mothers can compare prices and find the best deals.

Researching purchase intention for nourishment products is important because it can help companies understand the factors that influence mothers' purchase decisions. This understanding can be used to develop more effective marketing strategies, improve product development, measure the effectiveness of marketing campaigns and provide better customer service.

The buying cycle and consumer behaviour of first-time mothers are the main topics of this study, along with how they differ depending on the mother's age, income and place of residence. They must cope with a lot of desires, objectives and anxieties when becoming a mother for the first time. These significant adjustments impact the mother's potential self. The amount of the mother's concern, the breadth of their information search and the evaluation stage are all examined in this study.

The theory of planned behaviour as shown in Figure 1, is a widely recognised framework in the field of consumer behaviour that explains the relationship between attitudes, subjective norms, perceived behavioural control and behavioural intentions (Ajzen, 1991). The theory provides a comprehensive framework for understanding how financially independent mothers' prior product knowledge and information search can impact their purchase intention of nourishment products for their children. It emphasises the roles of attitudes, subjective norms and perceived behavioural control in shaping behavioural intentions, which, in this case, would relate to the decision to purchase specific nourishment products for their children. According to the theory, individuals' attitudes towards a particular behaviour significantly influence their intention to engage in that behaviour. In the context of mothers purchasing nourishment products for their children, prior product knowledge plays a crucial role in shaping their attitudes. Positive prior experiences and knowledge about the benefits of certain products may lead to more favourable attitudes towards purchasing them for their children (Ajzen, 1991). The theory suggests that perceived subjective norms, or the social pressure and influence from important others, affect one's behavioural intentions. In this research context, mothers may be influenced by the opinions and recommendations of family members, friends, healthcare professionals or other mothers in their social network regarding which nourishment products to purchase for their children. The strength of these subjective norms can be influenced by the information they have gathered through their independent information search (Ajzen, 1991). The theory posits that individuals' perceived control over a behaviour

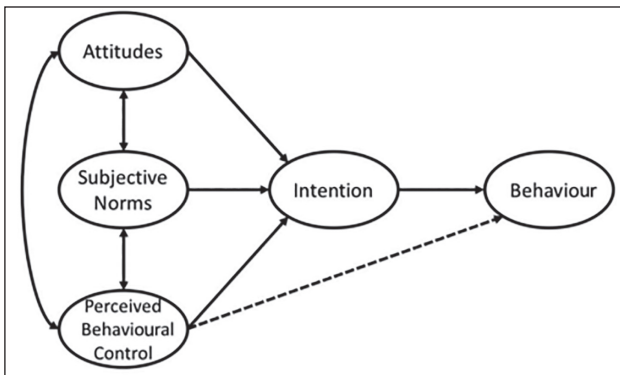


Figure 1. The Theory of Planned Behaviour.

Source: Ajzen (1991).

affects their intention to engage in it. In the context of mothers purchasing nourishment products, their perceived control can be influenced by their level of product knowledge and information search. Mothers with greater product knowledge may feel more confident and capable of making informed decisions, thus impacting their perceived behavioural control over the purchase (Ajzen, 1991).

Review of the Literature

Prior Product Knowledge

Anderson (1979) suggests that having prior knowledge of a product can satisfy the need to understand its various features, leading to a reduced inclination to seek additional information from external sources. On the contrary, Johnson and Russo (1984) propose that prior knowledge of product attributes enables consumers to generate more questions, prompting them to seek out more information. Brucks (1985) points out that well-informed customers might seek additional information proactively, even before encountering a problem, due to their awareness of existing qualities. However, when relevant product information is lacking or ignored, highly knowledgeable customers may conclude a product's characteristics or intended use (Alba & Hutchinson, 1987), which will be accurate only to the extent that prior knowledge is applicable.

According to Park and Lessig (1981), familiarity with a product, or prior product knowledge, significantly influences consumers' search for, recall of and use of information when evaluating product quality and making product choices. Hayes-Roth (1977) suggest that a user's knowledge structures or 'schema' become more sophisticated as their familiarity with a product increases. Both traditional (Howard & Sheth, 1969) and contemporary (Bettman, 1987) consumer choice models include the impact of previous knowledge of or familiarity with consumers' information processing. This notion is supported by the influence of past

purchase or usage experience with the relationship between price and perceived quality (Valenzi & Eldridge, 1972).

Katila and Ahuja (2022) provide further examples of the significance of organisational knowledge in the creative process of developing new products and services. They defined 'prior knowledge' as specialised knowledge acquired through work experience.

According to Dahl et al. (1999), the perceived novelty of a product or service relates to its originality, freshness and distinctiveness as experienced by individuals.

In a study by Johnson and Russo (1984), it was found that individuals with prior product knowledge or information stored in their memory tend to have an easier time processing information, allowing them to focus on relevant task-related information. Alba (1987) often operationalises consumers' objective or self-reported knowledge levels through prior knowledge.

Lewandowsky and Kirsner (2000) suggest that the effects of prior knowledge indicate that consumers with extensive knowledge in a specific domain tend to approach their goals with a greater sense of urgency.

Information Search

Dahl et al. (1999) noted that consumers engage in information search, a process through which they collect diverse information from various channels. This reliance on word of mouth (abbreviated as w-o-m) for recommendations when considering new product purchases is also evident in the work of Anderson in (1979). In contrast to impersonal information sources, w-o-m communications are described as immediate, participatory and a source of credible and sought-after information, as suggested by McEachern and Warnaby (2008).

Brucks (1985) highlighted that clients take their time to search for product information before making purchase decisions. In the field of library and information science, the Information Search Process (ISP) is a six-stage model of information-seeking behaviour, initially proposed by Zhang et al. (2010). Despite the apparent ease of information gathering on the Internet, Dickinger (2011) noted that customers still make purchases without having all the necessary facts due to existing search and processing costs.

According to Duncan and Olshavsky (1982), the Internet serves as a marketing medium with both unique and shared characteristics compared to other marketing channels. For instance, the Internet can efficiently store vast amounts of data in various virtual locations, making it accessible to users as needed. Contrasts between conventional and virtual (Internet-based) marketplaces are outlined by Zeithaml (1998). In the virtual marketplace, transactions are primarily centred around information about goods and services, unlike traditional marketplaces, where tangible products and services play a more central role. Electronic interactions on a screen replace face-to-face interactions in the virtual marketplace.

Johnson and Russo (1984) emphasises the significance of Internet interactions as they contribute to customer value and foster relationship development. Customers often view the Internet as an additional sales channel, information search tool and a source when making purchases of goods and services. They

further posit that individuals categorise things and events based on perceived similarities and resemblances in response to the overwhelming volume and diversity of information in their surroundings.

Purchase Intention

Carlson et al. (2005) discuss the idea that initially springs to mind for an individual when contemplating anything is their intention to make a purchase. This includes considerations about their feelings towards a specific product and the emotions or actions they might undertake if they were to acquire the same item from the same brand. Such justifications consistently amplify a brand's purpose and its encouragement for purchase. It is worth noting that both positive and negative effects can arise from this specific product. Arnould and Thompson (2024) highlight that a consumer's decision to purchase a brand or product is influenced not only by their attitude towards that brand but also by their exposure to other competing brands. The consumer culture theory has been developed with the help of brand purchase intentions in the context of human nature and environmental impacts.

Ajzen (1991) emphasises that a consumer's behaviour is positively influenced by their purchase intention. Furthermore, there are precursors to the intention to purchase luxury brands, as explored by Mitchell (1996). Moe (2004) defines purchase intentions as pre-formed plans to acquire specific goods or services in the future, though their execution depends on an individual's capacity to do so.

McEachern and Warnaby (2008) suggest that a customer's purchase intention is reflected in their thoughts. Similarly, research has found that customers typically identify the item they wish to buy, seek information about it, evaluate it, make the purchase and provide feedback. They further emphasise that customer behaviour during purchases is influenced by factors such as brand reputation, price, quality, awareness of leisure and innovation and other alternatives as well as impulsive tendencies.

Zhang et al. (2010) note that, traditionally, the term 'intention' has been used to describe the factors that influence and motivate customers to buy products and services. They also highlight that purchase intention represents an implicit commitment to repurchase an item on future shopping trips. Brands significantly affect consumers' purchase intentions, making it a fundamental concept in marketing literature. The relationship between purchase intentions and actual purchasing behaviour is a focal point for marketing researchers, and multiple studies have established a positive link between them (Morwitz & Schmittlein, 1992).

According to the theory of reasoned action (TRA), intention is the key determinant of behaviour, signifying an individual's likelihood to engage in a specific action (Zhang et al., 2010). In the context of consumer purchasing behaviour, purchase intention is defined as a consumer's intention to buy a product in the future (Hsu & Tsou, 2011).

Kolyesnikova et al. (2010) suggest that price, perceived quality and perceived value can all influence the intention to make a purchase, with internal and external factors playing a role in a buyer's decision-making process. Hsu and Tsou (2011) argue that purchase intention is a valuable predictor of actual purchasing

behaviour and has garnered significant attention in scholarly research. They describe purchase intention as an individual's perceived likelihood of engaging in specific activities, while Dickinger (2011) recognises the significance of the desire to purchase one of the consumer's intentions regarding products. Pennington-Gray and Schroeder (2013) define purchase intention as the likelihood that a customer will consider buying a specific brand; those who feel a stronger connection and sensory value with the brand tend to elevate their intention to purchase its products. Shafizadeh (2007) suggest that a higher purchase intention increases the likelihood of a buyer making a specific purchase. Additionally, they contend that purchase intention is the most accurate predictor of how buyers will behave during the purchasing process.

Prior Product Knowledge and Information Search

Bettman and Park (2012) conducted research indicating that the link between one's knowledge of a product and their act of seeking information about it is contingent upon the individual's motivation to seek such information. Prior knowledge pertains to what consumers already know about a product, shaping their level of expertise, defined as their ability to effectively handle tasks related to that product. Kolyesnikova et al. (2010) proposed that when consumers seek information before making a decision, they primarily rely on their existing knowledge of the product. This consumer knowledge encompasses their experiences with the product, their understanding of it and their overall comfort level. It refers to the internalised information guiding consumers in their decision-making process. Various researchers, such as Chao and Gupta (1995), Duncan and Olshavsky (1982) and Ratchford (2017), have studied the relationship between product knowledge and a consumer's pre-purchase search behaviour.

Additionally, Anderson et al. (1979) and Murray et al. (1991) have found a negative correlation between prior product knowledge and the depth of information search. According to Johnson and Russo (1984) and Ozanne and Brucks (1985), customers are more inclined to seek additional information when they are aware of the characteristics of a product. Ratchford et al. (2017) argue that knowledge initially exerts a greater influence than competence later in the search process, resulting in an inverted-U-shaped relationship between past knowledge and information search.

Every time a customer decides to purchase a product, they face numerous options, each claiming to meet their needs. Their criteria, existing product knowledge and the information they gather during the search process all impact their final product choice, as noted by Punj and Brookes (2021). According to Brucks (1985) and Ratchford et al. (2017), prior product knowledge reflects the consumer's perception of their familiarity with a specific product category. According to Biswas (2004), customers with limited product knowledge derive more value from information, while those with extensive product knowledge also perceive their abilities as higher, as Vroom (1964) suggests. The relationship between prior product knowledge and the motivation to search is influenced by the perceived value of additional information, as indicated by Shafizadeh's research in 2017.

Furthermore, product participation and knowledge frequently influence information search and purchase intention, as observed by Lin and Chen (2016).

H₁: There is a positive relationship between prior product knowledge and information search.

Information Search and Purchase Intention

Purchase decisions are frequently characterised by careful consideration and thorough information gathering, which serve to familiarise customers with the product category. This viewpoint is supported by McEachern and Warnaby (2008). In line with the information-processing perspective, consumers utilise various cues to navigate their decision-making process. These cues are triggered from memory when a buying decision is required, forming a network through which diverse stimuli can influence choices (Sternthal & Craig, 1984). The involvement and knowledge of a product often play a notable role in shaping information search and purchase intentions (Johnson and Russo, 1984). According to research by the Boston Consulting Group (2000), 28% of consumers' purchase attempts were deemed unsuccessful due to issues like locating desired goods, transaction completion or overall satisfaction during the purchase.

Ariely (2000) suggests that consumers' search activity can enhance customer satisfaction and increase the inclination to make purchases among visitors. Moe (2004) has presented compelling findings that establish a strong connection between online search behaviour, purchasing intentions and online search habits. Information overload can be a challenge for customers, as an excessive amount of information can complicate decision-making (Grether & Wilde, 2013). Excessive packaging information can also lead to suboptimal purchase choices (Speller et al., 2014). Consumer product knowledge has been extensively studied across various product categories, underscoring its significant influence on information processing and decision-making (Bettman & Park, 1980; Brucks, 1985; Carlson et al., 2005; Mitchell 1996).

Grewal et al. (1998) discovered that the volume of information did not consistently impact customer purchasing behaviour. Paradoxically, an excess of information, as highlighted by Johnson and Russo (1984), can lead to information overload, which is responsible for diminishing the quality of purchasing decisions.

H₂: There is a positive relationship between information search and purchase intention.

Prior Product Knowledge and Purchase Intention

In the research conducted by Alba and Hutchinson (1987), consumer knowledge is defined as the information consumers gather about products over time, acquired through exposure to various sources like advertising, salespeople or actual product usage. This knowledge forms the basis on which consumers rely to guide their

buying choices. Scholars such as Kolyesnikova et al. (2010), Kerstetter and Cho (2014) and Alba and Hutchinson (1987) emphasise the crucial role of consumer knowledge in influencing purchase intentions and call for more scholarly attention to this area. Consumer knowledge encompasses aspects such as familiarity, skill and experience, and it exhibits multiple dimensions. Numerous studies have consistently demonstrated that the extent of consumer engagement and product knowledge directly impacts their information search and purchase intentions.

Numerous research efforts have been dedicated to examining consumer product knowledge across a wide range of product categories, highlighting its significant influence on information processing and decision-making (Bettman & Park, 1980; Brucks, 1985; Carlson et al., 2005; Mitchell, 1996). Beatty and Smith (1987) define product knowledge as a consumer's evaluation of a product's suitability for purchase, taking into account their past experiences with it. Depending on their familiarity with a product, consumers develop different structures of product knowledge (Park & Lessig, 1981). Purchase intentions are also notably affected by the level of consumer product knowledge.

Ozanne and Brucks (1985) conclude that consumers with a strong grasp of product knowledge tend to assess a product primarily based on its quality because of their confidence in their knowledge, which leads to a greater inclination to form purchase intentions as they recognise the product's value. Duncan and Olshavsky (1982) add that consumers who possess extensive product knowledge are more likely to prioritise a product's quality over its price or any price reductions when making purchasing decisions. According to Zeithaml (1998), customers primarily consider a product's intrinsic value, informed by their product knowledge when deciding whether or not to make a purchase. Furthermore, Grewal et al. (1998) argue that consumers are more sensitive to a company's product quality when they perceive a positive brand image. However, it is essential to acknowledge that customers often face time constraints when making their decisions.

H₃: There is a positive relationship between prior product knowledge and purchase intention

Research Gaps and Motivation

The study aims to address several significant research gaps in the field of consumer behaviour and nutrition.

1. Limited understanding of financially independent mothers' purchasing behaviour
2. Lack of focus on prior product knowledge and information search
3. Need for insights into nutritional decision-making for children

The motivation behind this study stems from the recognition of the importance of promoting healthy dietary habits among children, particularly in the context of increasing concerns about childhood obesity and related health issues. Financially independent mothers play a significant role in shaping their children's dietary

habits through their purchasing decisions. Therefore, understanding the factors influencing their purchase intention regarding nourishment products for their children is crucial for developing effective interventions and marketing strategies aimed at promoting healthier dietary choices. By addressing the identified research gaps, this study seeks to contribute to the body of knowledge on consumer behaviour and nutrition, ultimately aiming to support efforts to improve children's health and well-being.

Objectives

The study aims to investigate several key objectives concerning the behaviours of financially independent mothers in relation to nourishment products for their children. First, it seeks to examine the extent to which prior product knowledge influences the information search habits of these mothers when considering nourishment products for their children. Second, it aims to explore the relationship between information search behaviour and purchase intention among financially independent mothers in this context. Lastly, the study aims to analyse the impact of prior product knowledge on the purchase intention of nourishment products for their children by financially independent mothers. By addressing these objectives, the research aims to provide insights into the decision-making process of financially independent mothers when selecting nourishment products for their children and to identify potential areas for intervention or improvement in marketing strategies aimed at this demographic.

Rationale of the Study

The rationale behind conducting the study stems from the critical need to understand the decision-making process of financially independent mothers regarding the selection of nourishment products for their children. With the increasing prevalence of financially independent mothers who are actively involved in household purchasing decisions, particularly concerning products related to the health and well-being of their children, it becomes imperative to explore the factors that influence their purchase intentions in this specific domain.

First, prior product knowledge is recognised as a significant determinant of consumer behaviour. Understanding how the level of prior product knowledge influences the decision-making process of financially independent mothers when choosing nourishment products for their children is crucial for marketers and policymakers. By elucidating the relationship between prior product knowledge and purchase intention, the study aims to provide insights into the extent to which mothers rely on their existing knowledge and experience when making purchasing decisions in this domain.

Second, the role of information search behaviour cannot be understated in today's information-rich environment. Financially independent mothers have access to a plethora of information sources, ranging from traditional media to online platforms, which can significantly influence their perceptions and attitudes

towards nourishment products for their children. Investigating the impact of information search behaviour on purchase intention allows for a deeper understanding of how mothers gather, process and utilise information in their decision-making process. Moreover, identifying the sources and types of information that are most influential in shaping purchase intentions can inform marketing strategies aimed at targeting this demographic more effectively.

Furthermore, by focusing specifically on nourishment products for children, the study addresses a particularly important aspect of consumer behaviour with significant implications for public health. Ensuring that financially independent mothers make informed and health-conscious decisions regarding the nourishment of their children is essential for promoting child well-being and preventing health-related issues in the long term.

By addressing this research gap, the study aims to contribute valuable insights into both academia and industry, ultimately informing marketing strategies, public health initiatives and consumer education efforts targeted at this demographic.

Methodology

Data Source

The data for this study was collected through surveys administered to financially independent mothers who are responsible for purchasing nourishment products for their children. Surveys were distributed either electronically or in-person, depending on the preferences and accessibility of the participants.

Sample Frame

The population targeted for the study consisted of financially independent mothers of children aged between 5 and 12 years. The sample size was determined to be 181. A financially independent rational mother was considered as a sampling element in the study. Non-probability purposive sampling techniques were employed to identify the respondents.

Empirical Model

The link between prior product knowledge, information search and purchase intention as shown in Figure 2, was measured using a standardised questionnaire. The questionnaire utilised was based on the work of Phan and Mai (2016). The scale used was of the Likert type, with a sensitivity of 5, where extreme values of 1 and 5 denoted strongly disagreeing and strongly agreeing, respectively. Reliability of the questionnaire was assessed using Cronbach's alpha. Exploratory factor analysis was conducted to identify underlying components in the study variables of prior product knowledge, information search and purchase intention. To determine the causal association between prior product knowledge, information search and purchase intention, multiple regression analysis was employed. The data analysis was conducted using SPSS AMOS.

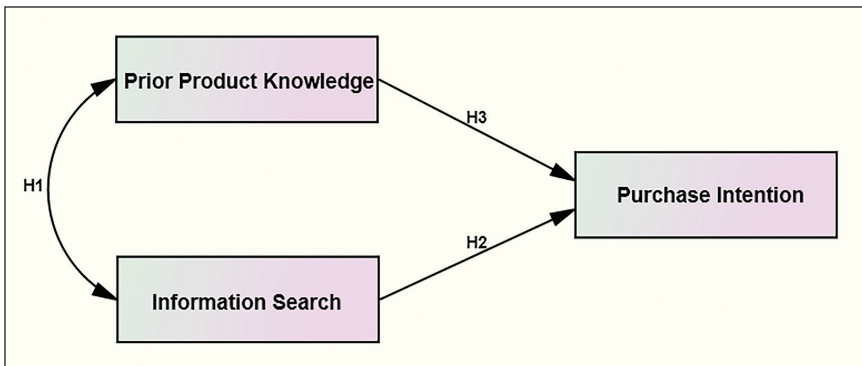


Figure 2. Research framework showing the interactions between prior product knowledge, information search and purchase intention.

Data Analysis

Descriptive Analysis

In this study, the distribution of ages within four distinct age groups (18–25, 26–33, 34–41 and 41 and above) was analysed, providing valuable insights into the demographic composition of the sample. The 26–33 age group exhibited the highest mean age (14.5333) and median age (17), suggesting a relatively older distribution compared to other groups. Conversely, the 41 and above age group had the lowest mean age (10.1667) and median age (8.5000), indicating a younger distribution within this category. Variance and standard deviation values revealed varying degrees of age diversity within each group, with the 34–41 age group showing the highest variance (25.363) and standard deviation (5.03613), indicating greater age diversity. The consistent range of 16 across all age groups signifies a similar spread of ages within each category.

Furthermore, three different brands—PediaSure, Protein X and Complian—were analysed in terms of their nutritional content. Statistical measures provided insights into the central tendency and variability of these brands' nutritional profiles. Interestingly, all three brands exhibited similar mean nutritional content, with PediaSure at 13.6222, Complian at 13.7647 and Protein X at 13.5686, suggesting comparable nutritional value on average. Median values closely aligned with the mean, indicating relatively symmetric data distributions. However, Complian demonstrated the highest variance (22.301) and standard deviation (4.72241) among the brands, implying greater variability in its nutritional content compared to the others. Conversely, Protein X exhibited the lowest variance (19.170) and standard deviation (4.37838), indicating more consistent nutritional content. Additionally, all three brands showed a consistent range of 14, suggesting a similar spread in their nutritional values.

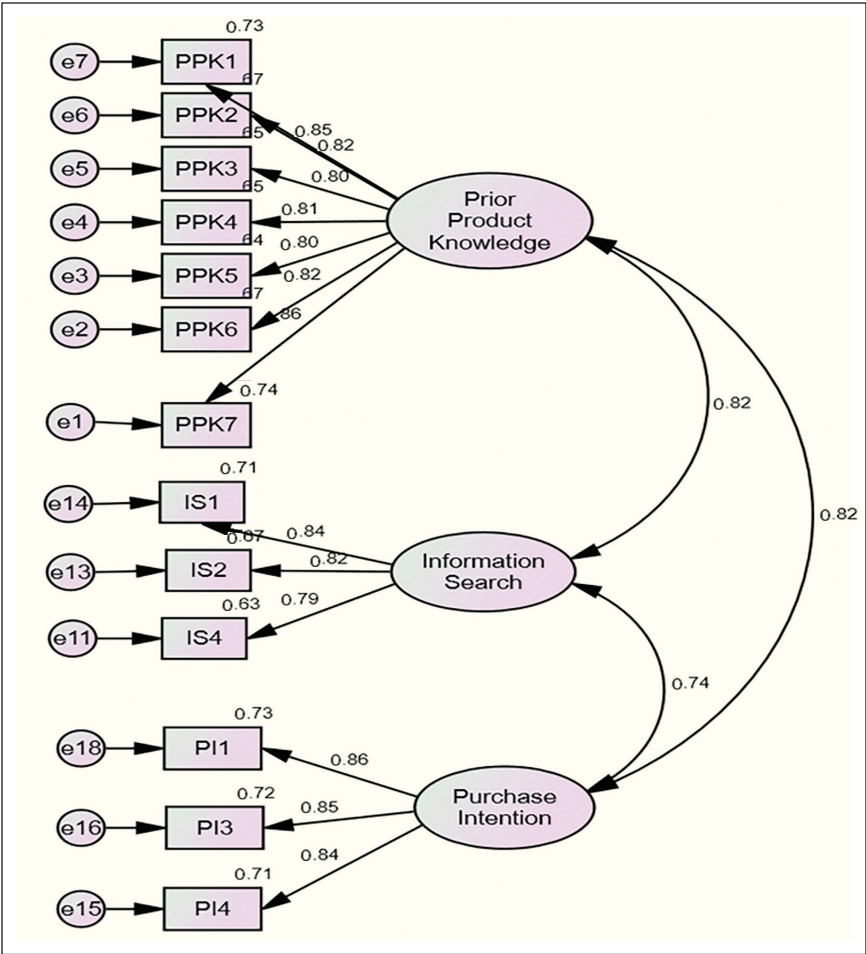


Figure 3. Measurement Model.

Confirmatory Factor Analysis

Measurement Model

The study assessed the convergent validity, average variance extracted (AVE) and composite reliability (CR) of the constructs—prior product knowledge, information search and purchase intention. Following the guidelines of Hair et al. (2013), with a cut-off value of 0.5, the AVE and CR were initially estimated. Similarly, for loading values, a threshold of 0.7 was considered acceptable. Although loadings exceeding 0.7 are preferred, loadings between 0.5 and 0.7 are deemed appropriate if the AVEs surpass 0.5 (Ramayah et al., 2018). In this study, all loading values exceeded 0.7, with AVEs greater than 0.5, indicating acceptable convergent validity (Table 1). Notably, AVE values close to or exceeding 0.7 are widely recognised

Table 1. Reliability, Validity and Factor Analysis.

Construct	Cronbach's Alpha	KMO Test	Chi-square	Items	Loading	CR	AVE	Path	R2
Prior product knowledge	0.936	0.922	955.133	PPK7	0.858	0.858	0.669	PPK-PI	0.82
				PPK6	0.820				
				PPK5	0.802				
				PPK4	0.807				
				PPK3	0.804				
				PPK2	0.819				
				PPK1	0.854				
Information search	0.929	0.913	898.177	IS4	0.794	0.937	0.679	PPK-IS	0.82
				IS2	0.818				
				IS1	0.841				
Purchase intention	0.907	0.836	467.172	PI1	0.843	.886	0.722	IS-PI	0.74
				PI3	0.850				
				PI4	0.856				

in current research practices. AVE values below 0.5 imply that items explain more errors than the variation in the constructs, hence failing to meet the measurement model’s criteria. Furthermore, composite reliability, akin to Cronbach’s alpha, signifies the internal consistency of scale items (Netemeyer, 2003). According to Morgan (2005), it represents the extent of score variance captured by the overall scale score variance. In this study, the internal consistency of each item within the scales was found to be satisfactory, surpassing the threshold of 0.7 for composite reliability across all constructs, affirming the validity and reliability of the measurement model.

The reliability analysis of the constructs—prior product knowledge, information search and purchase intention—yielded Cronbach’s alpha values exceeding the threshold at 0.936, 0.929 and 0.907, respectively, indicating high internal consistency. Additionally, Kaiser–Meyer–Olkin (KMO) values for each construct were found to be satisfactory, with values of 0.922, 0.913 and 0.836, respectively, suggesting that the sample size for the investigation was adequate. Chi-square analysis revealed significant findings at the 0% level of significance, with values of 955.133, 898.177 and 467.172, respectively, rejecting the null hypothesis and indicating that the data are suitable for further statistical analysis. Figure 3 shows the coefficients of determination (R^2) between prior product knowledge and purchase intention, prior product knowledge and information search and information search and purchase intention were 0.82, 0.82 and 0.74, respectively, indicating a strong association between the postulated relationships. Moreover, discriminant validity analysis showed that each scale was unrelated to the other scales being utilised, as listed in Table 2.

After refining the measurement model by removing certain items from the scales of information search and purchase intention, a well-fitting model was achieved. The Chi-square value, indicating 79.238 at a significance level of 6.9%, served as a measure to evaluate the goodness of fit of the model. All acceptable index values were found to meet the established thresholds, confirming the adequacy of the model in representing the relationships between the constructs.

Structural Equation Modelling

The study employed structural equation modelling (SEM) as shown in Figure 4, to investigate the impact of prior product knowledge and information search on the purchase intention of nourishment products for children by financially independent mothers. The analysis was conducted on a sample of 181 participants. The SEM model was determined to be recursive, and confirmatory factor analysis

Table 2. Discriminant Validity Analysis.

Information Search	Prior Product Knowledge	Purchase Intention
0.818		
0.819	0.824	
0.737	0.819	0.850

Table 3. Assessment of Normality (Group Number 1).

Variable	Min	Max	Skew	c.r.	Kurtosis	c.r.
PI4	1.000	5.000	-0.542	-2.978	-0.764	-2.099
PI3	1.000	5.000	-0.269	-1.476	-1.006	-2.762
PI1	1.000	5.000	-0.391	-2.150	-1.108	-3.043
IS1	1.000	5.000	-0.440	-2.416	-0.869	-2.386
IS2	1.000	5.000	-0.487	-2.674	-0.787	-2.162
IS4	1.000	5.000	-0.369	-2.024	-0.902	-2.477
PPK1	1.000	5.000	-0.702	-3.856	-0.510	-1.400
PPK2	1.000	5.000	-0.342	-1.877	-0.943	-2.589
PPK3	1.000	5.000	-0.380	-2.088	-0.709	-1.948
PPK4	1.000	5.000	-0.469	-2.577	-0.740	-2.031
PPK5	1.000	5.000	-0.449	-2.468	-0.851	-2.336
PPK6	1.000	5.000	-0.417	-2.292	-0.864	-2.372
PPK7	1.000	5.000	-0.441	-2.424	-0.818	-2.247
Multivariate					590.201	20.165

(CFA) was conducted using AMOS software. Thirteen endogenous variables, representing observed variables, were included in the analysis to examine the relationships among prior product knowledge, information search behaviour and purchase intention.

The statistical analysis as shown in Table 3, revealed that the data ranged from 1 to 5, with a sample skewness of 0.542 and kurtosis of -0.764, indicating a slightly positively skewed distribution. However, these values fall within an acceptable range, suggesting a relatively normal distribution. Specifically, a skewness value close to 0 (0.03) and a kurtosis value close to 3 (2.96) indicate a symmetric distribution, further supporting the assumption of normality. The use of maximum likelihood estimation was prevalent, emphasising estimations to maximise probability. These findings indicate that the data met the assumptions necessary for further analysis, ensuring the robustness of the subsequent statistical modelling.

One of the key measures of fit quality in SEM is the chi-square test. In this study, the chi-square value was found to be 79.238 with 62 degrees of freedom, resulting in a significance value of 0.069, which is greater than the conventional significance threshold of 0.05. Despite the chi-square test indicating a lack of perfect fit, the CMIN/DF ratio, which assesses model fit relative to degrees of freedom, was calculated to be 1.278, well below the threshold of 2. This suggests that the model adequately fits the data. The results of the SEM are presented in Table 4, providing further insights into the relationships between prior product knowledge, information search behaviour and purchase intention of nourishment products for children among financially independent mothers.

In the present study, the fit indices for the measurement model were evaluated and found to be satisfactory. These indices, along with their universally acknowledged cutoff values, are presented in Table 5 and Table 6, indicating the adequacy

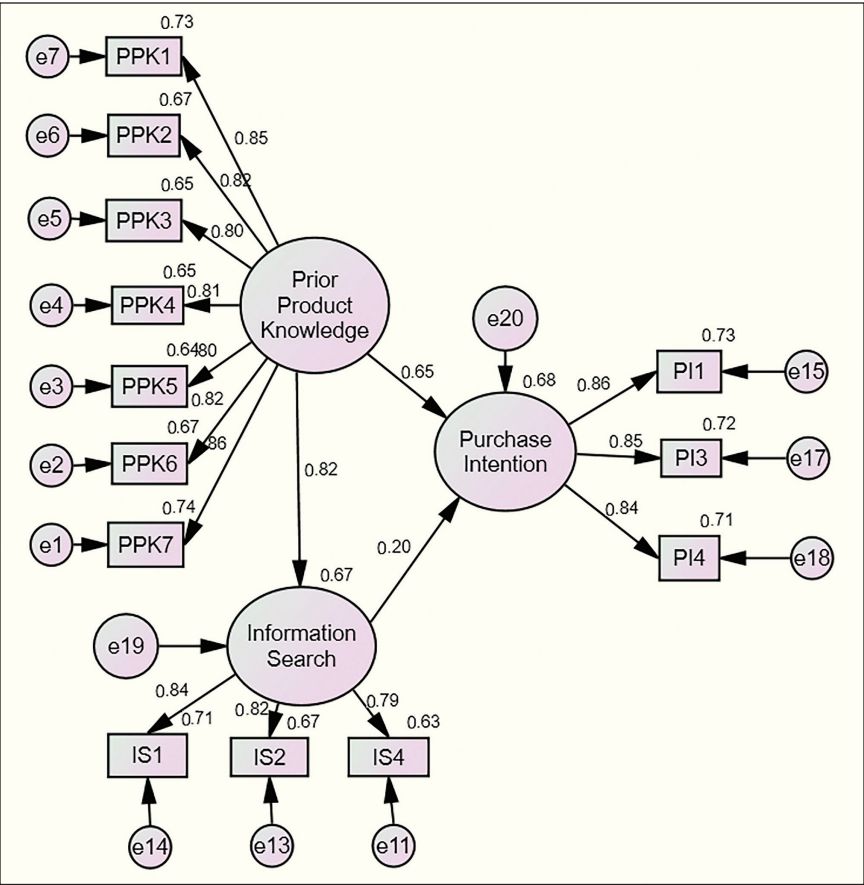


Figure 4. Structural Equation Modelling.

Table 4. Structural Equation Modelling Result.

Model	NPAR	CMIN	DF	<i>p</i>	CMIN/DF
Default model	29	79.238	62	.069	1.278
Saturated model	91	.000	0		
Independence model	13	1857.268	78	.000	23.811

of the model in capturing the underlying data structure. Following the assessment of the model’s fitness, an alternative hypothesis was formulated based on the regression output table, which provided insights into the relationships between prior product knowledge, information search behaviour and purchase intention of nourishment products for children among financially independent mothers.

H_1 : There is a positive relationship between prior product knowledge and information search.

Table 5. Recommended Value of Measuring the SEM Model.

RMR	GFI	AGFI	CFI	NFI	RFI	IFI	TLI	RMSEA
0.044	0.939	0.910	0.990	0.957	0.946	0.990	0.988	0.039
≤0.05 = ace table fit Diamantopoulos & Sigauw (2000); Steiger (2007)	≥0.9 = acceptable fit Kline (2005); Hu & Bentler (1998)	≥0.90 = acceptable fit Tabachnick & Fidell (2007)	≥ 0.90 = acceptable fit West et al. (2012); Fan et al. (1999)	Values < 0.9 can be usually improved substantially (Bentler & Bonett, 1980).	Values close to I indicate a very good fit, while I indicates a perfect fit.	Values close to I indicate a very good fit, while I indicates a perfect fit.	Values closer to I represent a very good fit, while I represents a perfect fit.	Values ≤ 0.05 are considered excellent (MacCallum et al., 1996).

Table 6. Table-of-fit Statistics of the Measurement Model.

Fit Statistics	Recommended	Obtained
CMIN		1.278
df		62
Significance of χ^2	0.5>	0.69
CMIN/df	1–2	1.278
GFI	>0.90	0.939
AGFI	>0.90	0.910
NFI	>0.90	0.957
RFI	>0.90	0.946
CFI	>0.90	0.990
TLI	>0.90	0.988
RMSEA	<0.5	0.039
RMR	<0.5	0.044

The regression analysis revealed a significant association between prior product knowledge and information search with purchase intention among financially independent mothers. By dividing the regression weight estimate by its standard error, a z -value of 10.305 was obtained ($z = 0.798/0.073$), indicating a strong correlation. The calculated R^2 value of 0.754 further supports this association, with a standard error of 0.073. With the alternative hypothesis not being ruled out at the 0% level of significance, it can be concluded that both prior product knowledge and information search are significantly correlated with purchase intention. This finding underscores the importance of understanding how mothers' knowledge and information-seeking behaviours influence their purchasing decisions regarding nourishment products for their children, providing valuable insights for marketers and policymakers aiming to promote healthier choices in this demographic.

H_2 : There is a positive relationship between prior product knowledge and purchase intention.

In analysing the impact of prior product knowledge and information search on the purchase intention of nourishment products for children by financially independent mothers, regression analysis was conducted. Dividing the regression weight estimate by its standard error yielded a z -score of 5.525 ($0.723/0.131$), indicating a strong and significant association. The reestablished association, as indicated by the R^2 value of 0.244, also had a standard error of 0.131. This substantial and significant association between prior product knowledge and purchase intention is evident, with the alternative hypothesis being upheld at a 0% level of significance, affirming the importance of prior product knowledge in influencing mothers' purchase intentions regarding nourishment products for their children.

H_3 : There is a positive relationship between information search and purchase intention.

The association between information search and purchase intention was examined using regression analysis. The regression weight estimate was calculated as 0.723, with a standard error of 0.140. Dividing the regression weight estimate by its standard error yielded a *z*-value of 1.742. Additionally, the coefficient of determination (R^2) was determined to be 0.244. Based on these findings, the hypothesis that there is a significant relationship between information search and purchase intention was disproved at the 0% level of significance. This suggests that the connection between information search and purchase intention is weak, indicating that other factors may play a more significant role in influencing purchase intention among financially independent mothers when it comes to nourishment products for their children.

Discussion

The findings of this empirical study show that prior product knowledge and information search affect the purchase intention for items of children's health and nutrition. This finding expands and is consistent with that of a recent study that looked at Indian rational mothers' intentions to buy children's health and nutrition items. According to the current study, consumers' prior product awareness and information seeking increase their propensity to buy children's health and nutrition items. Prior product knowledge and the depth of information search are negatively correlated by Anderson et al. (1979), Murray (1991) and others. According to Coupey et al. (1998), Johnson and Russo (1984) and Ozanne and Brucks (1985), customers are more likely to seek out further information when they are aware of the characteristics of a product. They contend that knowledge initially has a greater influence than competence later in the search process, resulting in an inverted-U-shaped link between past knowledge and information search. According to Ariely (2000), consumers' search activity may boost customer satisfaction and increase visitors' desire to make purchases. More (2013) provided intriguing findings demonstrating that online search mode is strongly related to purchasing intention and also linked the two to online search habits and purchase intentions. Customers may experience information overload; therefore, having more information may make it more difficult to make decisions (Grether & Wilde, 2013). An excessive quantity of packaging information may result in worse purchasing choices (Speller et al., 1974). Consumer product knowledge has been the subject of numerous studies that have looked at a wide range of product categories; this shows the significant influence that knowledge has on how information is processed and how decisions are made (Bettman & Park, 1980; Brucks, 1985; Carlson et al., 2005; Mitchell, 1996).

Conclusion

In conclusion, the findings of this study reveal a nuanced relationship between prior product knowledge, information search and purchase intention among financially independent mothers regarding nourishment products for their children.

The results suggest a strong association between prior product knowledge and information search, indicating that mothers who possess greater knowledge about nourishment products are more likely to engage in information search behaviours. Furthermore, the study highlights a significant relationship between prior product knowledge and purchase intention, underscoring the importance of mothers' existing knowledge in influencing their intentions to purchase nourishment products for their children. However, the relationship between information search and purchase intention appears to be less substantial, as evidenced by the refutation of the alternative hypothesis at the 0% level of significance. These findings emphasise the complexity of factors influencing mothers' purchasing decisions in this context and underscore the need for further research to explore the underlying mechanisms driving these relationships. Ultimately, understanding the interplay between prior product knowledge, information search and purchase intention can inform targeted interventions and marketing strategies aimed at promoting healthier dietary choices for children among financially independent mothers.

Managerial Implications

The managerial implications derived from the findings of this study offer actionable insights for marketers, policymakers, healthcare professionals and brands aiming to promote healthier choices among financially independent mothers when purchasing nourishment products for their children. Marketers can effectively utilise mothers' prior product knowledge as a means of segmentation, recognising that informed mothers may require different marketing approaches compared to those with less knowledge. Tailored marketing strategies can be developed to address the distinct needs and preferences of these segments. Providing easily accessible and reliable product information is crucial, as mothers often conduct information searches before making purchase decisions. Brands can positively influence mothers' purchase intentions by ensuring that accurate and comprehensible product information is readily available. Additionally, insights gleaned from mothers' prior knowledge can inform product development, enabling companies to design products that align with mothers' specific needs and expectations. Policymakers can leverage data on mothers' prior product knowledge to implement targeted educational programmes or regulations that promote healthier choices. Encouraging mothers to actively seek information about nourishment products empowers them to make better decisions, and brands can support this by providing resources and establishing trust through transparent and honest marketing practices. Collaboration with healthcare professionals can further strengthen mothers' confidence in their product choices. Moreover, continuous feedback from mothers can aid in product improvement, and engagement with online communities and social media platforms allows brands to share educational content and build relationships with their target audience responsibly. Finally, brands must remain mindful of the ethical implications of marketing to mothers and children, prioritising transparency, responsible advertising practices and a commitment to children's well-being in all marketing efforts.

Limitations

This study has some limitations; to guarantee result generality, more research could be done utilising a bigger sample size. It is advised to the researchers that since the study utilised a non-probability sampling approach, future research might be conducted utilising a probability sample technique. Indian respondents made up the study's sample. It is possible that the outcome cannot be applied globally. In further research, it may be beneficial to utilise a meticulously crafted survey instrument and explore alternative data collection methods to mitigate respondents' undue defensiveness, thus diminishing the inclination towards individual bias.

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Linking Accessibility, Easiness and Satisfaction of Users for Public Service Deliveries Through ICTs: Do Amenities Make Things Better?

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Abstract

This study explores the complex relationships between the accessibility of information and communication technologies (ICTs) in rural Haryana and user satisfaction with public services. The study explores how 'easiness' mediates the relationship between accessibility and satisfaction, putting forth a complex model of moderated mediation in which amenities play a key moderating role. Using a large dataset of 981 respondents, the study makes use of several advanced statistical techniques. The results show that there is a significant mediation impact of ease of use in the link between accessibility and satisfaction. Additionally, the study reveals that amenities have a moderating effect on this association, influencing its nature and degree of strength. Remarkably, the ease of use mediates the indirect effect of accessibility on satisfaction, which is strongest in areas with a lot of good or high-quality amenities. All things considered, this study makes a substantial contribution to our understanding of the complex interactions between accessibility, ease of use, conveniences and user satisfaction when it comes to ICT-based public service delivery in rural regions. The information gathered has important policy implications since it highlights how facilities and technology accessibility play a crucial role in increasing user satisfaction in rural development programs.

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Keywords

Accessibility, easiness, satisfaction, amenities, moderated-mediation

Introduction

New technology is constantly popping up everywhere, and people see all sorts of improvements as progress (Dua, 2023; Prakash et al., 2023). There are an increasing number of intriguing new things to look forward to (Sharma et al., 2023). These ongoing technical developments provide up new possibilities in the field of information and communication technology (ICT), such as improved connection, creative solutions and a fast-changing digital world. ICT has necessarily altered how people, businesses and governments operate now. In today's information society, the Internet has developed into an important medium for the spread of information, goods and services. In a variety of contexts, including learning, shopping, marketing, travel, trade etc., citizens desire to utilise the Internet as a transactional device. In G2C, G2E, G2G and G2B services, Carter and Belanger (2004) emphasised the use of ICT to increase competence and access for the general public. In addition, governments have recognised the value of the Internet and made crucial changes to employ it to distribute public services, ensuring that all citizens have access to them despite of where they are (Karim, 2003; Alam & Zafar, 2017; Bruske, 2013; Chigona & Ndlovu, 2014; Latif & Bashir, 2013).

According to Fang (2002) and Datta and Roy (2016), e-government is a way for governments to utilise the most cutting-edge ICT services, especially web-based Internet applications. These programmes can increase the quality of services, give residents more accessible access to government information and give democratic institutions and procedures more opportunities. e-government involves many issues out of which accessibility is the main challenge (Eslami & Asadi, 2018; Jaeger, 2003, Lee & Kwak, 2012). The study of Jaeger (2003) further dictates that accessibility of public service deliveries through ICTs by the government has an indirect impact on the satisfaction of the citizens. So, this study has tried to explore the relationship between accessibility and the e-satisfaction of citizens empirically.

The study of Alawneh et al. (2013) has portrayed that accessibility is not directly associated with employee satisfaction but mediated through easiness. Easiness of using e-government services plays a crucial role in the satisfaction of the general public (Alshira'H, 2020, Krishnan et al., 2004 and Jha & Sahoo, 2017). The study of Jaeger (2003) also indicated that accessibility to easiness creates a higher impact on the e-satisfaction of citizens, but so far as our knowledge is concerned no such empirical testing has taken place. So, this study has tried to bridge the gap by exploring the mediating effect of easiness in the relationship of accessibility and satisfaction.

Government jumped on this digital trend in order to better serve the general people. In a way, the government is attempting to resemble the private sector more. Why can't a government office respond to complaints and accept orders around the clock, seven days a week, if the private sector can? The answer to this question is the amenities provided to better access the schemes or services (Liao & Chen,

2015; Nair & Thomas, 2018; Okafor & Okoye, 2017; Parikh & Gupta, 2017; Rai & Sahay, 2005). Nowadays, the state government is trying to come up with various amenities so that citizens of rural areas can easily access the services (Raju & Rao, 2017; Saxena & Kumar, 2018; Singh & Kumar, 2017). Nevertheless, to the best of our understanding, no such empirical study has taken place that checked how strongly amenities create an impact on the relationship of accessibility and satisfaction via easiness. So, the existing gap has been covered in the current research.

When it comes to e-government schemes and services, there are very few studies that have taken place to explore the accessibility and its impact on the e-satisfaction of the general public, specifically in India. Also, to the best of our understanding, no study has checked the mediating effect of easiness and moderating effect of amenities in the aforesaid relationship. So, the primary aim of this study is to explore the mediating and moderating role of easiness and amenities in the relationship of accessibility and satisfaction in Haryana rural residents.

Review of Literature

Effect of Accessibility on Satisfaction

Citizens now have more and simpler access to other sources for obtaining public services. To continue using the web channel, however, the public must think that it provides greater options than the alternatives. According to Geyskens et al. (1999) and Geyskens and Steenkamp (2000), there are both economic and non-economic elements that influence customer pleasure. When customers find utilising government websites suitable, for instance, and money-saving, they are satisfied with the overall efficacy and competence of the electronic channel. Prior studies on technology adoption and e-government have revealed evidence that users' channel preference, or intention to continue using a service, is motivated by perceived utility, accessibility and happiness with the original service (Bhattacharjee, 2001; Devaraj et al., 2002; Ngulube, 2007; Fraser & Sudbury, 2014; and Furuholt & Sæbø, 2018). According to Devaraj et al. (2002), perceived utility, accessibility and perceived ease of use are the factors that contribute to perceived electronic channel consumer satisfaction. Additionally, if e-government websites are helpful, concerned and dependable throughout the access procedure and subsequent contacts with residents, users will find the experience rewarding. So, the following hypothesis was proposed:

H_1 : Accessibility has positive and significant impact on the satisfaction of users.

Mediating Effect of Easiness in the Relationship of Accessibility and Satisfaction

The term easiness has been considered as a significant factor in the relationship between accessibility and e-satisfaction. However, there is a shortage of research available on e-government services; still, there are few researches that focus on

the importance of ease of use for the satisfaction of the users of e-government services (Gupta & Sharma, 2015; Hung & Chen, 2016; Kindel et al., 2014). There are studies other than e-government studies that indicated the noteworthy mediating role of easiness in the association of accessibility and satisfaction. According to one study by Kim et al. (2018), the association between accessibility and satisfaction in the context of online shopping was mediated by ease. In other words, customers were happier with their buying experience the easier it was for them to access and use an online business. Ease of use moderated the association between accessibility and satisfaction in the context of public transport, according to a different study by Liu et al. (2017). In other words, the more delighted passengers were with their travel experience, the simpler it was for them to use public transport. According to these studies, ease can be a key mediator in the relationship between accessibility and satisfaction. In other words, accessibility might not always increase satisfaction directly, but rather through the mediating role that easiness plays. So, the following hypothesis was proposed:

H₂: Easiness positively and significantly mediates the association of accessibility and satisfaction.

Moderating Effect of Amenities

A study by Biswas et al. (2020) in another context discovered that the connection between accessibility and satisfaction was positively moderated by the presence of amenities. In other words, even if the accessibility to attractions was not as good, travellers who had access to quality amenities were more likely to be pleased with their vacation. One more study, carried out by Assaker et al. (2015), discovered that the age of the visitor is affected by the moderating impact of amenities on the link between accessibility and satisfaction. The presence of amenities had a bigger moderating impact on younger tourists than it did on older ones. These studies imply that facilities, particularly when accessibility is not as strong, might be a significant factor in deciding visitor pleasure. However, other elements, such as the age of the visitor, may affect the moderating influence of facilities. This indicates that higher levels of facilities offered to users have a stronger link with accessibility and satisfaction than do lower levels of amenities.

This could be the case for several reasons. First off, amenities can facilitate users' access to and use of a good or service. For instance, it will be simpler for people to find what they are looking for if a website offers lots of helpful features, such a search bar and a FAQ area. Users may be more satisfied as a result because they will be less likely to feel annoyed or frustrated. Second, amenities can improve the usability of a good or service. Users are more likely to like visiting a website if it contains a lot of fascinating content, such as articles, videos and photographs. Users will be more likely to wish to use the website again in the future, which might boost satisfaction. Thirdly, facilities might let customers know that a good product or service is being offered. Users are more likely to think highly of a website if it includes several characteristics that are intended to make it simple

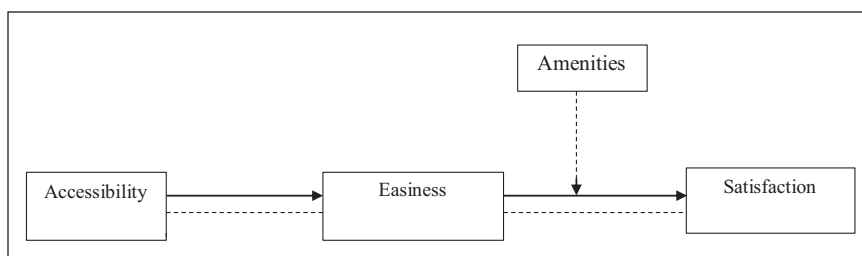


Figure 1. Hypothesised research model.

Notes: Easiness is used as mediator and amenities as moderator.

to use, such as a user–friendly interface and a responsive design. Users will be more likely to trust the website and be eager to promote it to others, which can boost user happiness (Huang et al., 2015). So, the following hypothesis was proposed:

H_3 : Amenities moderate the association between accessibility and satisfaction.

H_4 : The effect of accessibility on satisfaction via easiness is conditional on amenities. The relationship is stronger in the case of high level of amenities provided to users than providing lower level of amenities.

The figure given below depicts the whole hypothesised research model used in this research article (see Figure 1).

Objectives of the Study

The following sub-objectives are set consecutively to accomplish the main objective: to check the effect of accessibility on satisfaction of the citizens, to check the mediating role of easiness in the association of accessibility and satisfaction and to check the moderating role of amenities in the association of accessibility and satisfaction via easiness.

Research Methods

Description of Sample and Respondents' Profile

To evaluate the hypothesis, primary data were collected from users of rural area of Haryana, India. The study's data were collected via questionnaires. But, first a pilot research was conducted via online with 182 respondents of Haryana to see if the scale was easily understandable. After the results of the pilot study were confirmed, questionnaires were handed out in person to 1100 citizens of rural area in Haryana in addition to the respondents in the pilot study. A sum of 995 responses was received out of which 14 responses were deemed incomplete

Table 1. Measurement variables with factor loadings, reliability and validity values.

Factors and Measured Items	EFA Loadings	Cronbach Alpha	Composite Reliability	Average Variance Extracted	Maximum Shared Variance	Average Shared Variance
<i>1. Accessibility</i>		0.711	0.879	0.533	0.046	0.022
There is a service link in state portal and national portal.	0.790					
I can avail the service in both English and local language.	0.701					
There is availability of multiple navigation routes for service and information.	0.899					
I can easily access total number of transactions done.	0.886					
<i>2. Easiness</i>		0.866	0.796	0.509	0.086	0.043
It is easy to use online platforms (e.g., Antyodaya, SARAL etc.)	0.764					
I found it easier and faster.	0.712					
It is easy to apply for schemes and services.	0.819					
It is easy to understand the whole process while using online platforms.	0.717					
<i>3. Amenities</i>		0.788	0.870	0.713	0.086	0.038
Application form can be easily downloaded online.	0.868					
It is easy to find website in top search engines.	0.736					

(Table 1 continued)

(Table 1 continued)

Factors and Measured Items	EFA Loadings	Cronbach Alpha	Composite Reliability	Average Variance Extracted	Maximum Shared Variance	Average Shared Variance
There is a user manual available to guide the user.	0.774					
4. Satisfaction		0.728	0.761	0.533	0.046	0.022
I feel comfortable in conducting government transactions.	0.810					
It ensures the confidentiality of my personal information.	0.905					
It never misuses my personal information	0.615					
It doesn't provide my personal information to others without my consent.	0.567					

and were therefore discarded. Finally, the study used 981 responses yielding an effective response rate of 89.18% (Alreck & Settle, 1995). The sample comprised of 153 respondents who were working in public sector and 828 from private sector. Survey included 639 male and 342 female respondents. Out of total, 873 respondents were into manufacturing and 108 were from service sector.

Measures

On a Likert scale of 1 to 5, with 1 denoting strongly disagree and 5 denoting strongly agree, all scales were evaluated. According to Tavakol and Dennick (2011), Cronbach's alpha values varied from 0.711 to 0.866, demonstrating an adequate internal reliability. Please look up all the variables in Table 1.

Accessibility (Independent Variable)

Accessibility scale was measured by self-structured questionnaire using three items including 'there is a service link in state portal and national portal', 'i can avail the service in both English and local language' and 'there is availability of multiple navigation routes for service and information'.

Satisfaction (Dependent Variable)

Satisfaction was measured using four items of the self-structured questionnaire that is 'i feel comfortable in conducting government transactions', 'it ensures the confidentiality of my personal information', 'it never misuse my personal information' and 'it doesn't provide my personal information to others without my consent'.

Easiness (Mediating Variable)

All four items were taken from self-structured questionnaire to measure easiness including 'it is easy to use online platforms (e.g., Antyodaya, SARAL etc.)', 'i found it easier and faster', 'it is easy to apply for schemes and services' and 'it is easy to understand the whole process while using online platforms'.

Amenities (Moderating Variable)

Three items were used to measure amenities taken from self-administered questionnaire including sample items 'application form can be easily downloaded online', 'it is easy to find website in top search engines' and 'there is a user manual available to guide the user'.

Control Variables

Nature and gender of the respondents were taken as control variables (Guerrero & Barraud-Didier, 2004).

Common Method Bias

To lessen the likelihood of bias, steps were taken before data collection (Podsakoff et al, 2012). The action taken in this direction was to maintain respondents' anonymity so they could respond freely. Following data collection, the second phase involved applying the most used statistical method, Harman's Single Factor, to determine whether the data were biased (Podsakoff et al., 2012). The method can explain the bias in the data if one significant general factor accounts for the majority of the covariance between the measurements (Podsakoff et al., 2003). However, the results showed that the variance explained by the single component was only 28.43%, which is much less than the acceptable threshold of 50% (Tehseen et al., 2017). Therefore, there was no issue with biases.

Statistical Analyses and Hypothesis Testing*Initial Analysis*

All 15 items were exported to factor analysis to evaluate the loadings of observed items on their underlying components. The results of performing varimax rotation disproved the idea that constructs are one-dimensional by revealing four components with eigen values larger than one. In Table 1, factor loadings for exploratory factor analysis (EFA) are displayed. After that, internal reliability was examined and determined to be adequate (Hair et al., 2010), with Cronbach's alpha values

Table 2. Means, standard deviations and correlations.

Variables	No. of Items	Mean	SD	1	2	3	4	5	6
1. Nature	–	1.89	0.313	–					
2. Gender	–	1.84	0.363	–0.151**	–	–			
3. Accessibility	4	3.96	0.325	0.239***	–0.158**	0.845	–		
4. Easiness	4	3.99	0.586	0.156***	–0.181**	0.792***	0.714	–	
5. Amenities	3	3.94	0.237	0.166***	–0.911**	0.555***	0.227***	0.844	–
6. Satisfaction	4	3.75	0.471	0.0187***	–0.215**	0.376**	0.379***	0.240***	0.730

Notes: *** $P \leq .001$; ** $P \leq .01$ SD, standard deviation.

ranging from 0.711 to 0.866. For the goal of analysing the convergent validity of the components, AMOS 21 was utilised to determine composite reliability (CR) and average variance extracted (AVE). According to Hair et al. (2010), values of CR ranged between 0.761 and 0.879, which is higher than the recommended value of 0.70. Values of AVE varied from 0.509 to 0.713, which were regarded as greater than the acceptable (Hair et al., 2010). The discriminant validity of the constructs was then determined using maximum shared variance (MSV) and average shared variance (ASV) (Hair et al., 2010). The calculated values of AVE were higher than both MSV and ASV.

Descriptive Statistics

In Table 2, the findings for means, standard deviations, correlations and discriminant validity were displayed. Significant correlations between the variables were discovered, which provided guidance for the hypothesis. It was necessary to test for multicollinearity after detecting substantial correlations between independent variables. Variance inflation factor (VIF) and tolerance calculations were made in order to examine multicollinearity (Miles, 2014). According to Aminu and Shariff (2014), VIF values between 1.034 and 1.114 fell below the threshold value of three. The range of tolerance values, which were larger than the lowest limit of 0.20 proposed by Aminu and Shariff (2014), was determined to be between 0.904 and 0.918.

Hypotheses Testing

Regression Analyses

The direct links were examined using multiple regression analysis. Table 3 displays each relationship's outcomes. Model 2 which depicts the direct impact of accessibility on satisfaction was determined to be significant and favourable ($\beta=0.268$, $P \leq .001$). The outcomes so supported H1. However, the direct relationships between independent (accessibility) and mediator (easiness) and mediator and dependent (satisfaction) have also been assessed for understanding the significance of mediator in the relationship.

Table 3. Results of multiple regression for direct effects.

Independent Variables	Easiness	Satisfaction	
	Model 1	Model 2	Model 3
Constant	2.875***	3.499***	3.382***
Nature	0.067	-0.014	0.050
Gender	-0.303**	-0.579**	-0.462**
Accessibility	0.353***	0.268***	—
Amenities	—	—	0.225***
R ²	0.134	0.360	0.361
F statistic	50.535***	83.511***	84.316***

Notes: *** $P \leq .001$; ** $P \leq .01$.

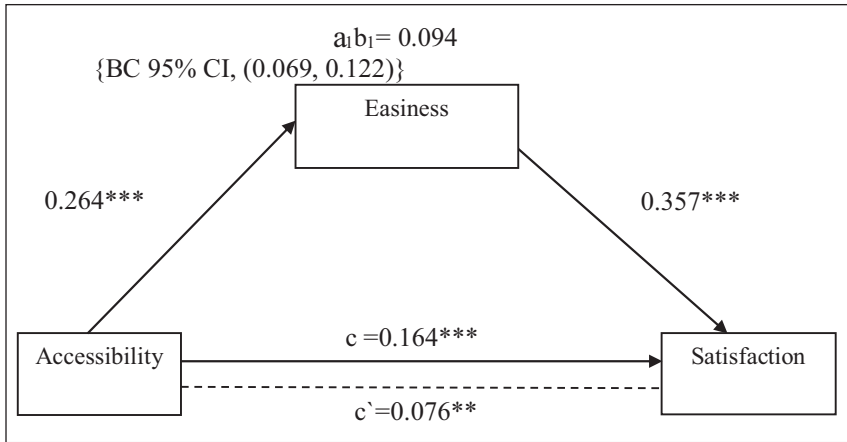


Figure 2. The mediation model showing total, direct and indirect effects.

Notes: (a) c represents total effect of accessibility on satisfaction; (b) c' represents direct effect of accessibility on satisfaction; (c) a_1b_1 represents indirect effect of accessibility on satisfaction through easiness; (d) the numbers in the above figure represent the path coefficients derived from the model using PROCESS; (e) *** $P \leq .001$; ** $P \leq .01$; (f) BC refers to bias corrected; 5000 bootstrap samples were requested

Model 1 which depicts the direct relationship between accessibility and easiness was determined to be substantial and favourable ($\beta=0.353$, $P \leq .001$). Model 3 demonstrates a significant and positive direct relationship between amenities and satisfactions of citizens ($\beta=0.225$, $P \leq .001$). It dictates that study should go further to check the mediating effect of easiness in the relationship of accessibility and satisfaction.

Table 4. Results for total, direct and indirect effects.

	Total Effect				Direct Effect				Indirect Effect			
	β	SE	LLCI	ULCI	B	SE	LLCI	ULCI	β	SE	LLCI	ULCI
Ac→Ea→Sa	0.164 ^{***}	0.031	0.104	0.224	0.076 ^{***}	0.032	0.012	0.139	0.094 ^{***}	0.014	0.069	0.122

Notes: β refers to standardised coefficient; Ac refers to Accessibility; Ea refers to Easiness; Sa refers to Satisfaction; SE refers to standard error; LLCI refers to lower limit confidence interval; ULCI refers to upper limit confidence interval; *** $p \leq .001$; ** $p \leq .01$.

Table 5. The moderating effect of amenities between the relationship of accessibility and easiness.

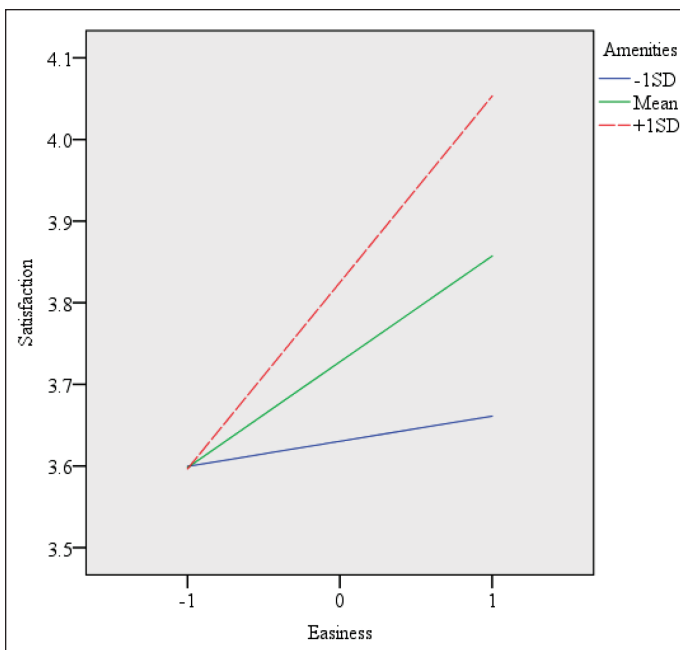
Variables	B	R ²	R ²	F-value
Step 1		0.203		59.155
Accessibility	0.056*			
Easiness	0.277***			
Step 2		0.033		51.923
Easiness	0.711***			
Amenities				

Notes: *** $p \leq .001$; * $p \leq .05$

Table 6. MODMED index and conditional indirect effects of accessibility on satisfaction through easiness at different levels of amenities (± 1 SD).

Mediator	Amenities	Conditional Indirect Effect	BootSE	Bootstrapping BC 95% CI	
				Lower	Upper
Easiness	-1 SD (0.237)	0.109	0.033	0.045	0.173
Easiness	Mean (0)	0.277	0.026	0.227	0.328
Easiness	+1SD (0.237)	0.446	0.037	0.374	0.518
Moderated mediation index					
Easiness		0.219	0.033	0.155	0.282

Notes: MODMED refers to moderated mediation; BootSE refers to bootstrapped standard error

**Figure 3.** Conditional indirect effects of accessibility on satisfaction through easiness at different levels of amenities (± 1 SD).

Mediation Analysis

The mediation was evaluated using bootstrapping through Model 4 of Hayes' (2013) PROCESS Macro in SPSS. The total, direct and indirect effects are displayed in Table 4. It is discovered that easiness mediates the relationship between accessibility and satisfaction (effect = 0.094, LLCI = 0.069 and ULCI = 0.122).

Significant indirect relationship is explained by absence of zero between upper and lower confidence ranges. Therefore, the results confirmed H2. The results also showed that the mediated direct effect of accessibility on satisfaction was significant, indicating a partial mediation of easiness.

Moderated Mediation Analysis

Process Macro Model 14 in SPSS was used to check the moderated mediation model (Hayes, 2013). The model produced several results about interaction and conditional indirect effects. The significant interaction between easiness and amenities was shown in Table 5 (0.711, $P \leq .001$). Thus, H3 was supported. Figure 3 provides a visual representation of the moderating impact of amenities.

Model further exhibited conditional indirect effects (see Table 6). The table elucidated that the positive indirect effect of accessibility on satisfaction via easiness was strongest at the highest level (+1 SD) of amenities ($\beta=0.446$) and weakest at the lowest level (-1 SD) of amenities ($\beta=0.109$). Additionally, the moderated mediation index was found significant (Effect = 0.219, LLCI = 0.155 and ULCI = 0.282). Thus, H4 was supported.

Discussions

The continuous technological development at the national level has influenced the government to focus on public service deliveries through ICTs in rural areas of the nation. To study how the accessibility of these e-government services create an impact on satisfaction level of citizens of rural area specifically in Haryana, this study has been conducted. The study based on 981 respondents of rural area from six divisions of Haryana has examined the impact of accessibility on satisfaction by using a moderated mediation model. Easiness has been considered as a mediator between accessibility and satisfaction and amenities as a moderator between the indirect relationship of accessibility and satisfaction via easiness.

Results have revealed that accessibility have significant and positive impact on satisfaction. Further, the study findings have disclosed a positive relationship between accessibility and easiness which described that high accessibility acted as a predecessor for generating easiness among citizens. Further, easiness has been found to be related with satisfaction among citizens in a positive way.

Further, the study has depicted the presence of easiness in the relationship of accessibility and satisfaction which indicated that accessibility is not directly linked with satisfaction, but, firstly, it elicits easiness among citizens which resultant helps the citizens to attain satisfaction. However, results have shown a partial mediation but the mediator that is easiness has a strong presence as the indirect effect of accessibility on satisfaction is stronger than the mediated direct effects. In this way, the results have provided a new insight by unveiling the importance of easiness in enhancing satisfaction among citizens.

Afterwards, the study found that amenities moderate the relationship between accessibility and satisfaction via easiness. Further, the varying effects of amenities on the aforesaid relationship were also calculated. Figure 3 depicts that

initially the effect of accessibility on satisfaction via easiness was found lower even at higher level of amenities. This happened because citizens were having low accessibility of public service deliveries at that time. The findings described that when accessibility of e-government services were less than high amenities provided to citizens could not generate easiness among the general public to avail those services which further was not able to provide optimum satisfaction. Further, when accessibility increased then the higher level of amenities produced more easiness which resultantly yielded high satisfaction among citizens. This explained that a high level of amenities was only utilisable when there was equivalent easiness of using public service deliveries through ICTs, in such case, accessibility finally led to increased satisfaction among citizens for e-government services.

Managerial Implications of the Study

The manner in which individuals interact with the government has changed significantly as a result of the growing technological improvements in e-government services, in addition to the points already highlighted. The public's expectations and needs for effective and user-friendly services have changed as a result of these changes. The widespread availability of technology is one of the main elements enhancing the accessibility of e-government services. More individuals than ever before have access to government services quickly and easily thanks to the widespread use of smartphones, tablets and Internet connectivity. Citizens now find it simpler to interact with many government departments and organisations, from requesting licences and permissions to getting access to crucial information and resources.

The accessibility of e-government services has grown to be essential to citizen satisfaction. The public today recognises the efficiency and convenience that these digital platforms provide. Governments may considerably increase the ease with which residents can access these services by offering user-friendly interfaces, streamlined procedures and prompt customer assistance. People's satisfaction levels naturally rise when they meet few obstacles and have a simple, hassle-free connection with e-government platforms.

The study also emphasises the significance of amenities as a regulating component in the link between accessibility, ease and citizen satisfaction. Government agencies must understand how important it is to offer extra advantages and conveniences that improve the overall experience of using e-government services. This might include tools that help users navigate among the many services, such as online lessons and guides, personalised recommendations or online chat support. Governments may develop a pleasant atmosphere that encourages citizen satisfaction by focusing on enhancing amenities along with accessibility and ease. Easy access to services and the prompt supply of additional benefits can help people feel cared for and responsive by the government. When citizens' demands are handled quickly and effectively, they will feel respected and appreciated, which will boost satisfaction and raise the possibility that they will continue to use e-government services.

In conclusion, e-government services are becoming more widely available, and this has changed how governments interact with their citizens. Governments may greatly raise public satisfaction levels by putting a priority on usability and assuring the availability of extra amenities. This study emphasises the value of concentrating on e-government's ongoing improvements.

Limitations and Future Research Directions

The minor shortcomings of this study point to interesting areas for future research. The first restriction relates to the area of data collection. All aspects were taken into account when collecting data using a cross-sectional design. Future studies can therefore concentrate on longitudinal survey designs because the results may be more intriguing. The second restriction has to do with how data is collected. In this study, the sole form of data collection used was a questionnaire; however when data are gathered through an interview approach, other significant insights may become apparent. Even though some steps were taken to check for biases in the data, future studies can still use some additional techniques as recommended by Podsakoff et al. (2012) to avoid common method bias, such as gathering data from various response modes or separating predictor and criterion variables in the questionnaire.

The association between accessibility and satisfaction has been partially mediated by easiness, suggesting that there may also be additional mediators present in this relationship that may have a favourable impact on satisfaction, such as effectiveness and content availability. Additionally, this study only took amenities into account as a mediator on the way to easiness and satisfaction; however, future studies may also take perception and transparency into account. Last but not least, future studies can examine this association by considering gender, nature and sector as moderators in the aforesaid relationship.

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Mapping the Evolution of Sensory Marketing: A Bibliometric Analysis

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Abstract

In recent years, sensory marketing, particularly in the context of atmospheric and ambient environments, has witnessed substantial growth in research activities. However, despite this proliferation of studies, there has been a lack of comprehensive scientific mapping in this domain. To address this gap, this study employs bibliometric analysis to examine the body of research in sensory marketing. Data were extracted from the Scopus database using article classification, a journal coverage criterion. The analysis used the Biblioshiny application within the bibliometric package developed in R-Studio and VOS Viewer. The findings indicate an exponential growth in research within this field, with most publications originating from the United States of America and China. Key topics that emerged prominently in this research include 'sensory marketing', 'sensory brand experience', 'customer satisfaction', 'five senses', and 'aesthetics'. In this article, the core elements of sensory marketing are defined as 'background music', 'advertising', and 'sensory brand experience', offering valuable insights for marketers seeking to leverage sensory marketing for long-term benefits. The study makes a variety of contributions. It details the development of sensory marketing during the last few decades. In conclusion, sensory marketing is a complex strategy that harnesses the power of the human senses to provide memorable brand experiences. The study shows the scope of assisting future digital sensory marketing in shaping consumer perceptions and preferences and

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understanding cross-cultural marketing in the increasing landscape of digital sensory marketing.

Keywords

Sensory marketing, five senses, consumer behaviour, multisensory marketing, bibliometric

Introduction

Consumer behaviour often centres on emotional responses and post-usage feelings, reflecting a fundamental aspect of human nature (Dissabandara & Dissanayake, 2019). The term ‘sensory marketing’ emerged as an acronym to encapsulate studies exploring the influence of feelings on consumption outcomes (Krishna, 2010, p. xii). Sensory marketing, a strategic approach, capitalises on human senses to craft memorable and emotionally resonant consumer experiences. By providing multisensory stimuli at the point of sale, sensory marketing methods are utilised to generate positive reactions from customers, speeding up the decision-making process (Antunes & Veríssimo, 2024; Kim et al., 2021) and enhancing their experience (Antunes & Veríssimo, 2024; Wörfel et al., 2022). Diverging from conventional marketing tactics, it integrates sensory elements like sight, sound, smell, taste and touch into branding and communication. This holistic approach deeply engages customers, leaving enduring impressions and fostering brand loyalty. Companies can effectively cultivate hedonic value and competitive advantages by appealing to their customers’ senses. Consequently, many businesses, goods and services adopt sensory experience platforms (Pine & Gilmore, 1998). Historically, marketing researchers heavily relied on information-processing models (Bettman, 1979), often neglecting the role of the five senses (Hultén, 2015). However, sensory factors significantly influence consumer judgement and behaviour (Holbrook & Hirschman, 1982). In recent years, sensory marketing has gained prominence as scholars and marketers recognise the profound impact of sensory stimuli on consumer behaviour. Drawing insights from psychology, neuroscience and consumer behaviour, this approach delves into how sensory cues shape perception and decision-making. Psychologists have found that cognition is grounded in bodily sensations rather than being independent of perceptual modalities (Barsalou, 1999). In marketing, researchers investigate how consumers’ perceptions of products and shopping environments impact their decision-making (Krishna, 2012). As there is still much work to be done on sensory marketing, it is crucial for businesses seeking to connect with consumers on a deeper level, create memorable brand experiences and gain a competitive advantage in today’s dynamic marketplace.

This study is necessary since customer behaviour and marketing tactics are changing in today’s fast-paced industry. Businesses looking to establish enduring brand experiences and a stronger connection with their audience must fully grasp and utilise the power of sensory marketing, as emotional reactions and post-usage sentiments increasingly shape consumer behaviour. This study aimed to

quantitatively map the landscape of sensory marketing research and delve into 25 key papers in the field. Its primary objectives were identifying crucial sensory marketing elements from existing literature, tracking emerging trends, determining the most frequently cited paper, and fostering collaboration among authors and countries. The findings underscore a significant upsurge in sensory marketing research over recent decades, with approximately 2000 papers published across business, economics and decision-making domains. Comprehensive studies that map the research landscape in this discipline identifies significant trends and highlight seminal publications are necessary as sensory marketing gets traction. This study uses statistical analysis of recent literature and relevant documents to bridge this gap and provide practitioners and scholars with helpful information.

Bibliometric Analysis

Studies on bibliometric analysis examine trends in previously published literature using mathematical and statistical methods (Singh & Dhir, 2019). A bibliometric study can yield various indicators, including university productivity. Furthermore, it provides insights into co-authorship patterns among journals, countries and universities (Avilés-Ochoa et al., 2021). Bibliometric analysis typically measures productivity by quantifying the number of publications, while the number of citations often gauges the influence of research (Merigo et al., 2018). The widely used h-index is a popular indicator combining publications and citations into a single measurement. Alternatively, researchers may also assess productivity using metrics such as the citation-to-papers ratio or the impact factor, which calculates the mean number of citations per paper (Olheten et al., 2005). With an ever-increasing number of publications, the area of sensory research must be given a meta-perspective. This study attempts to close the considerable gap in the area by doing a complete bibliometric analysis of the field of sensory marketing.

The following research question is addressed here:

- RQ1- Which research area of sensory marketing has already been done, and which are the most influential authors, keywords and countries?
- RQ2- How did the research evolve over this period, and what are the future research areas in sensory marketing?

Research Methodology

Bibliometric studies employ quantitative analysis to explore a specific body of literature by examining bibliographic characteristics (Hawkins, 1997). Also, bibliometric analysis involves examining citations within scholarly publications through various frameworks, tools and methodologies (Debicki et al., 2009; Ferreira et al., 2019; Duhoon & Singh, 2023). This practice has spurred the creation of diverse metrics aimed at unveiling the intellectual fabric of a vast academic domain and assessing scientific journals, research endeavours and researchers accordingly (Rani & Salanke, 2023). By employing bibliometric analysis, a researcher can statistically investigate the relationships between citing

and cited papers (Lawani, 1981; Fouroudi et al., 2020). Consequently, bibliometric methods are highly suitable for mapping the research landscape within sensory marketing (Krishna, 2012). The co-citation technique offers the advantage of identifying articles of significant research value and elucidating their connections. This study utilises a co-citation matrix to provide a symmetrical representation of the values associated with paired co-cited articles (Culnan, 1987).

The first step of this study is to identify which data collection database is to be followed based on a specific search strategy.

Search Strategy and Data Retrieval Process

As shown in Figure 1, identifying an appropriate database was the first step in the data-gathering procedure for this project. A query was then developed using

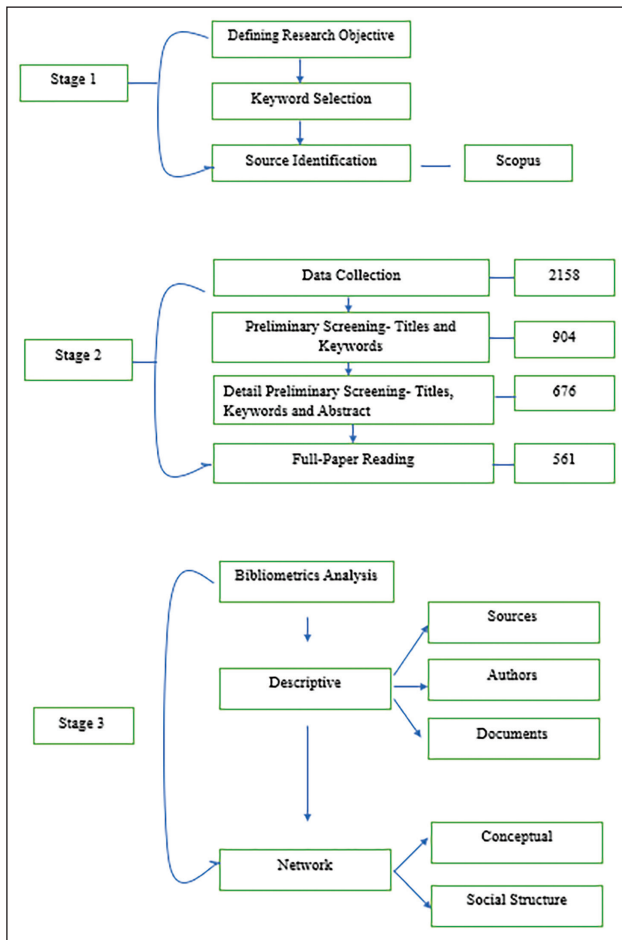


Figure 1. Flowchart for the Selection of the Document for Bibliometric Analysis.

Source: Bhatia et al., 2021.

appropriate keywords for the study to ensure thorough coverage. Once the database was chosen, the study utilised software tools and relevant inclusion and exclusion criteria were set. The data processing tools' janitor function in R-Studio was then used to clean the data. Records that did not fit specific requirements were eliminated throughout the data-collecting stage. These requirements included articles written outside of English, without peer review, outside of marketing, consumer behaviour, or business research domains and without addressing a sensory marketing-related study question. This intensive screening procedure has ensured the quality and applicability of the dataset for further research. Moreover, network maps were created to improve data visualisation and reveal the conceptual, intellectual and social patterns present in the collection. A more significant hold of the study environment in sensory marketing was made possible by these maps, which offered insightful information about the relationships between writers, papers and sources (Aria & Cuccurullo, 2017).

Database Selection

Choosing the appropriate database is crucial for bibliometric analysis. Scopus was selected due to its comprehensive coverage of scholarly journals across various disciplines, making it suitable for capturing a broad spectrum of research relevant to sensory marketing. Additionally, Scopus is compatible with R-studio's bibliometric software and VOS Viewer, facilitating seamless data extraction and analysis.

Data Preparation

Upon selecting Scopus, data extraction was conducted in CSV format to ensure compatibility with the chosen analytical tools. This involved retrieving metadata such as publication titles, authors, keywords and citation counts. Subsequently, documents were screened and shortlisted based on predefined search criteria established on 05-07-2023, ensuring relevance to the study objectives.

Keyword-based Search Strategy

A comprehensive search strategy was developed using prominent keywords associated with sensory marketing research. These keywords included 'sensory marketing', 'five senses', 'sensory aesthetics', 'consumer behaviour', and 'store atmospherics'. By incorporating relevant terms, the search strategy aimed to capture diverse literature relevant to sensory marketing.

Search Approach

The search strategy employed a Boolean logic-based approach to effectively combine and refine search terms. Specifically, the search query utilised the logical operators 'AND' and 'OR' to retrieve articles encompassing the intersection of relevant topics. This approach ensured that retrieved documents were highly

relevant to the study's focus on sensory marketing, sensory brand experiences and consumer behaviour.

Timespan Selection

To provide a comprehensive overview of the evolution of sensory marketing research, the study encompassed a significant time span from 1990 to 2022. This extended period allowed for the identification of trends, patterns and shifts in research focus over time, providing valuable insights into the development of the field. Additionally, it ensured the inclusion of seminal works and foundational literature that have contributed to shaping the landscape of sensory marketing.

Data Analysis and Findings

Scientific mapping and descriptive analysis were used to analyse the data (Figure 1).

The general specifications of the data set, for example, (a) documents, (b) authors and (c) sources/journals, are focused upon when conducting descriptive analysis of the bibliometric data

Using visualisation methods, such as three-field plots and network analysis, facilitates further analysis as part of scientific mapping, which requires extensive science mapping for deriving the knowledge structures.

Data extraction from the complete texts of each study incorporated into the systematic review encompassed various elements. These extracted data encompassed the study's key findings pertinent to its research questions, the identity of the author(s), the specific research question(s) addressed within the study, the study's title, the year of publication and the name of the publication. These data served as the foundational basis for the subsequent analysis.

Among the 561 articles subjected to analysis, they had initially appeared in 263 distinct journals, books and related publications. Notably, a significant concentration of these 561 surveyed articles emanated from journals specialising in marketing, signifying robust strength in this domain. Additionally, various articles were dispersed across journals covering broader subjects, including economics, production, management and business.

Descriptive Analysis

Data Set.

A comprehensive overview of the bibliometric dataset is provided in Table 1, consisting of 561 carefully chosen papers found using a methodical search query on the Scopus database. These materials have an average reference score of 28.81 and come from 263 distinct publications. The international cooperation index, which stands at 21.57 and indicates significant research collaboration among researchers across many geographical locations, is remarkable. This partnership demonstrates the international scope of sensory marketing research and the range of viewpoints and specialities that have aided its development. Additionally, the dataset's diversity illustrates the multidisciplinary character of sensory marketing

Table 1. Summary of the Data Set.

Main Information About Data	
Timespan	1990:2023
Sources (Journals, Books, etc)	263
Documents	561
Annual growth rate %	8.33
Document average age	6.85
Average citations per doc	28.9
References	1
Document contents	
Keywords plus (ID)	400
Author's keywords (DE)	1679
Authors	
Authors	1231
Authors of single-authored docs	93
Authors collaboration	
Single-authored docs	100
Co-authors per doc	2.64
International co-authorships %	21.57
Document types	
Article	537
Review	24

research, which incorporates knowledge from various disciplines, including psychology, marketing, neuroscience and consumer behaviour.

The three-field plot (Figure 2) employs Sankey plots to elucidate further the relationships among various elements, where the node's value is proportionate to its size (Riehmann et al., 2005). In this visualisation, authors are depicted on the left portion of the plot, keywords are represented in the middle, and the chosen sources for the review are positioned on the right. Within this framework, 25 keywords of significance, such as 'sensory marketing', 'background music', 'touch', 'advertisement', 'color', 'sensory perception', 'sensory brand experiences', and 'aesthetics', are associated with their respective sources and profiled authors. It is noteworthy that all 25 influential journals encompass the overarching theme of 'sensory marketing', with a distinct emphasis on subtopics like 'mental imagery', 'five senses', 'customer satisfaction', 'perception', and 'consumer behaviour', underscoring their pivotal role in this research domain.

Sources.

A notable upward trend is evident from 1990 to 2023, as in the scientific productivity chart (Figure 3). Including variables like mean total citations per article,

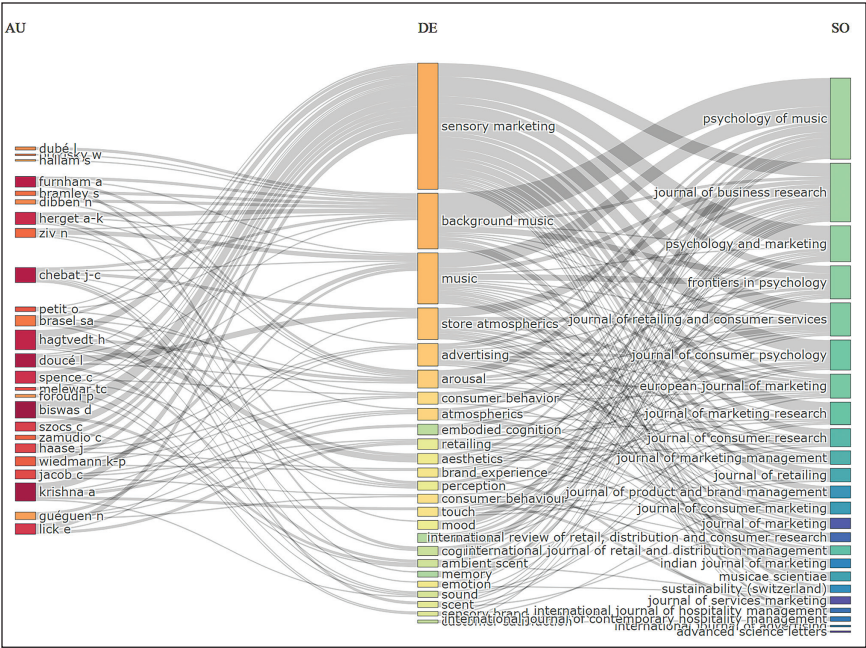


Figure 2. Three-field Plot.

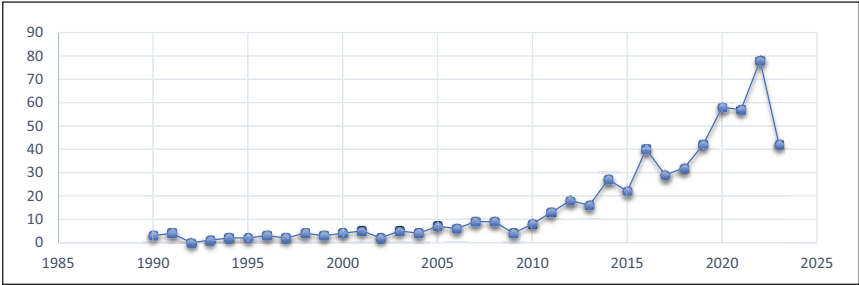


Figure 3. Scientific Production Chart.

mean Figure 3 provides a detailed summary of the citation patterns for articles released between 1990 and 2015, including total citations per year, number of publications and citable years. Mean total citations per year normalises this number across time, whereas mean total citations per article illustrates the average impact of citations on publications in a certain year. Citable years show the length of time a work has been cited, whereas the total number of papers shows how many publications there have been. Combined, these measures provide insightful information on the lifespan and effect of research outputs over a 25-year period through citations, which helps explain patterns in the field’s academic influence.

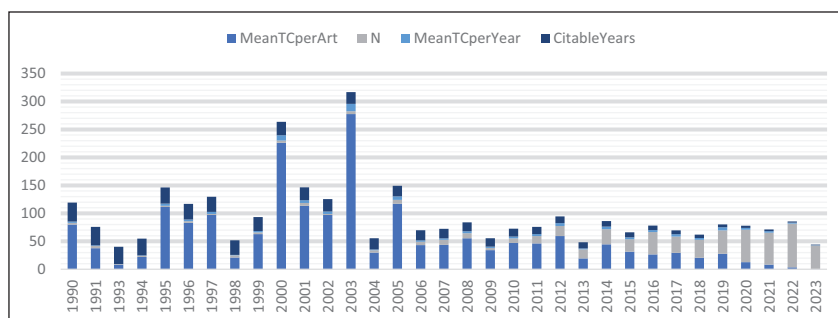


Figure 4. Average Citation Chart.

There is a substantial surge in research output, particularly after 2009, which can be attributed partly to the increasing focus on studies related to sensory marketing and consumer behaviour. Additionally, average citations experienced a significant increase in the year 2023, as depicted in Figure 4. Despite the continuous growth in the number of publications on this topic, it is essential to note that the field has not yet matured.

Impact of Journals.

The h-index and g-index are used in bibliometrics to quantitatively assess academic journals' influence. With an h-index of 20 and a g-index of 31, for example, the Journal of Business Research stands out due to its significant productivity and extensive citation effect. With an h-index of 13 and a g-index of 24, the Psychology of Music magazine, in contrast, exhibits a notable scholarly influence within its specialised field. These metrics help researchers identify essential articles; for instance, the Journal of Consumer Psychology has an h-index of 13, highlighting its importance in consumer behaviour research. These quantitative evaluations influence funding decisions, publication choices and the general knowledge of the effect of research and academic communication (Table 2).

Authors.

The most number of publications in the field were produced by Biswas, Krishna and Spence (Figure 5). Biswas and Krishan have more than ten articles published in this field. An impact factor (h-index) analysis shows they are the authors most impacted. Their output is seminal. In this domain, these articles are essential from a future research perspective. Most articles written by author D. Biswas (9) are in the lead, followed closely by A. Krishna (8) and L. Doucé (7). This analysis sheds light on specific authors' scholarly influence and involvement while revealing their prolificacy and contributions within their respective domains.

Figure 6 depicts the journals that have published most research articles in the field of sensory marketing. The journal with the maximum number of publishings is Psychology and Marketing, with a contribution of 41 articles, followed by Journal of Business Research, with 31 articles; Journal of Consumer Psychology, with 24 articles; and also, there are other journals like the Frontier of Psychology, journal of retailing, European journal of marketing, etc. As depicted in this figure,

Table 2. Source Impact Chart of Journal.

Journals	h-index	g-index
Journal of Business Research	20	31
Psychology and Marketing	15	24
Journal of Consumer Psychology	13	14
Psychology of Music	13	24
Journal of Retailing and Consumer Services	11	17
European Journal of Marketing	10	15
Frontiers in Psychology	8	16
Journal of Consumer Research	8	8
Journal of Marketing Research	8	10
Journal of Retailing	8	8
International Journal of Retail And Distribution Management	6	9
Journal of Marketing Management	6	8
Musicae Scientiae	6	7
International Journal of Advertising	4	4
International Journal of Hospitality Management	4	4
Journal of Consumer Marketing	4	5
Journal of Marketing	4	4
Journal of Product and Brand Management	4	5
Journal of Services Marketing	4	4
Computers in Human Behaviour	3	3
Indian Journal of Marketing	3	4
International Journal of Contemporary Hospitality Management	3	4
International Review of Retail, Distribution and Consumer Research	3	4
Journal of Consumer Behaviour	3	4
Journal of Environmental Psychology	3	3

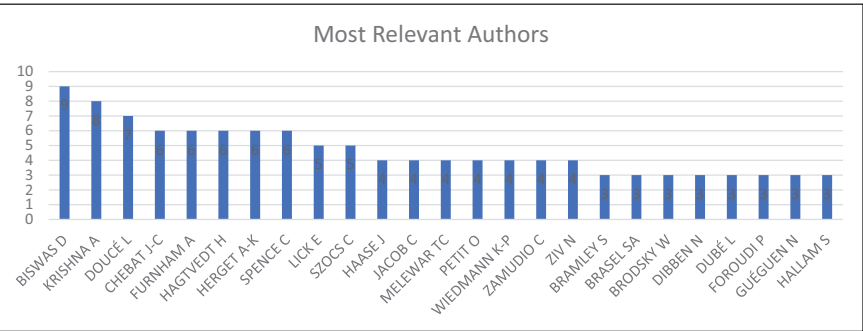


Figure 5. Most Relevant Author's Chart.

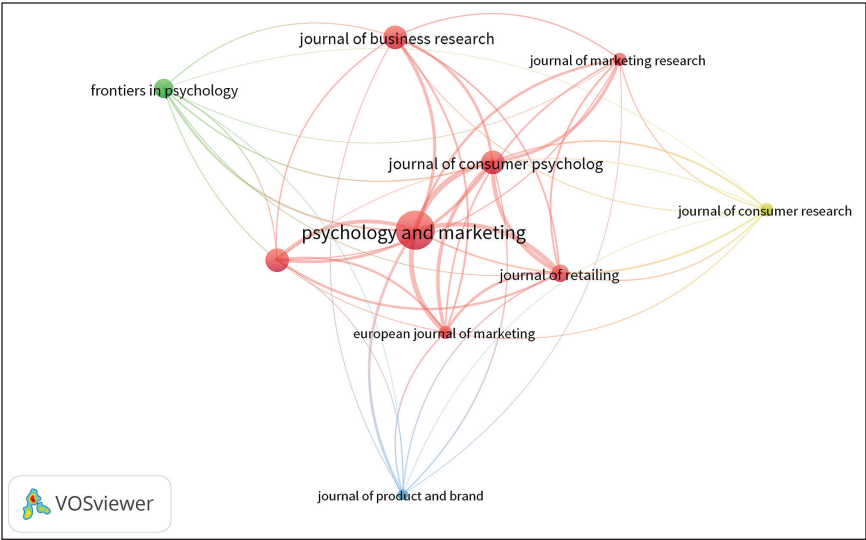


Figure 6. Top 25 Most Relevant Sources.

Psychology and Marketing exhibit the highest number of publications. The most frequently cited journals encompass those with specific focus, such as advertising, and those engaging in interdisciplinary research, such as consumer studies. A greater diversity of journals covering the research domain implies a wide range of research topics and underscores the multidisciplinary research domain implies a wide range of research topics and underscores the multidisciplinary nature of this field of inquiry (Low & Siegel, 2019)

Country-wise Contribution.

Table 3, for most of the literature in this area, found that developed countries contributed the most, which was found from the commitment of various nations to this field. Most of the distributions nearby were in the USA with a frequency of 299, while the United Kingdom was a distant second, but China’s frequency of publication (130) in the area is higher. The number of citations received by articles depends on the volume of publications within the specific field. The prominence of research activity within the USA region is underscored by the fact that it accounted for approximately 70% of the total citations received in the field. Additionally, bibliometric data unveiled that the USA surpassed other regions regarding citation reception, with the UK, France and Canada. These countries, while noteworthy, received comparatively fewer citations in total.

Institution Wise.

Figure 7 shows each institution’s affiliations and for each institution, along with the total number of papers linked to it. Each row represents a distinct academic institution, and the number in the ‘Articles’ column corresponds to the number of publications related to that specific university. Curtin University, for instance, has

Table 3. Top 10 Countries Production and Citation.

Scientific Production by the Country		Countries with the Most Citations	
Countries	Frequency	Countries	Total Citation
USA	299	USA	4489
China	130	United Kingdom	1239
UK	128	Canada	1000
Germany	94	France	636
France	86	Australia	569
Australia	76	China	437
India	56	Sweden	417
Canada	53	Germany	385
South Korea	38	Netherlands	344

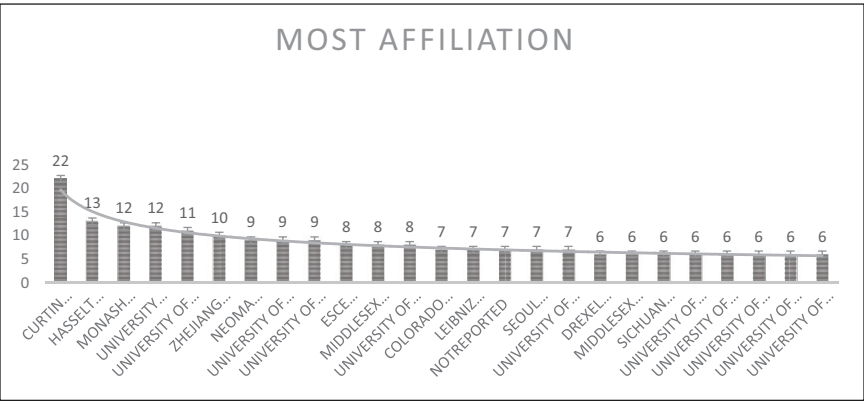


Figure 7. Most Relevant Affiliation Chart.

the most papers—22—followed by Hasselt University and Monash University, which have 13 and 12 articles, respectively. This breakdown, which reflects the varied institutional and geographic location of research communication and cooperation, provides insights into the contribution of different academic institutions to research output within the designated categories.

Documents.

Figure 8 presents this field’s 25 most cited documents. More than 100 citations were received from all these articles. Indicating the most cited document (774), Eroglu et al. (2003) authored the top four publications. Krishna (2012), with more than 700 citations, and Chebat (2003), with around 500 citations, were the articles with the maximum citations in the field. This article discusses the importance of sensory marketing and its impact on consumer behaviour. The critical reference

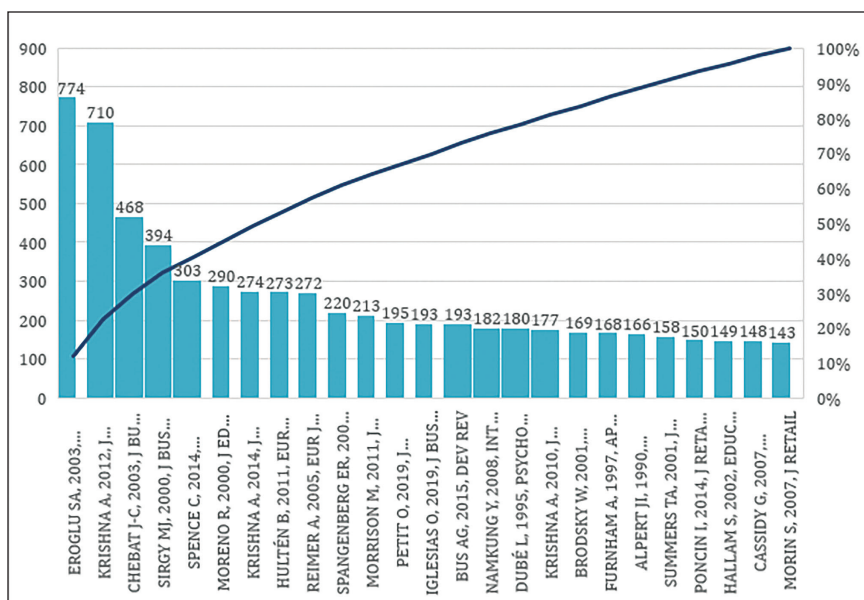


Figure 8. Most Cited Document.

articles in the field can be considered as the ones that were the most cited articles.

Keywords.

The recurrence with which the catchphrases were utilised in the articles showed that the expression ‘tangible showcasing’ seemed multiple times, trailed by ‘background music’, ‘music’, ‘store atmospherics’, ‘advertising’, ‘arousal’, ‘atmospherics’, ‘shopping experiences’, ‘emotions’ and ‘aesthetics’. The word cloud addressed in Figure 9 is a visual portrayal of the recurrence of the words in the report, shown by the size of the word. It tends to be utilised as an intermediary for the significance of the word in writing. There has been a sensational expansion in the frequencies from 2015 onwards. Various antecedents that could be inferred from this word cloud have been explored, including studies of sensory marketing like brand experience, sensory brand experience and mental imagery. Most of them dealt with understanding the consumer behaviour of buying the product with their senses.

As seen from the analysis of the articles, the frequency of the keywords used showed that the term ‘sensory marketing’ appeared 142 times, followed by ‘background music’, ‘products’, ‘brand experience’, and ‘sensory brand experience’. As shown by the word size, the word cloud addressed in Figure 10 shows the recurrence of the words in the record through a visual portrayal. It very well may be utilised as an intermediary for the significance of the word in writing. Aside from these, supposedly, it was predominant. From 2015 onwards, there has been

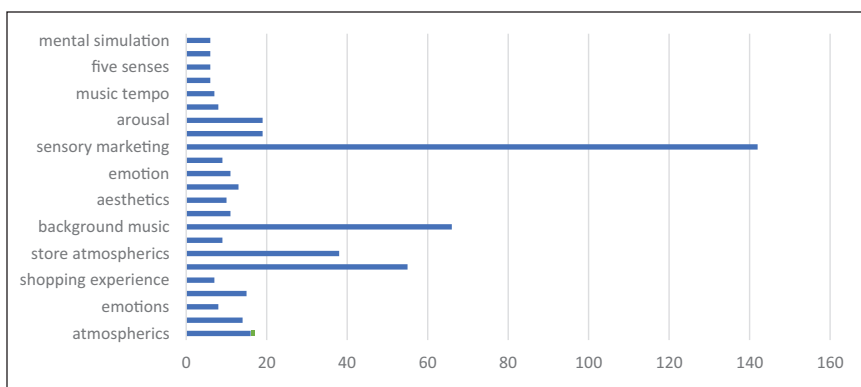


Figure 9. Most Relevant Words.

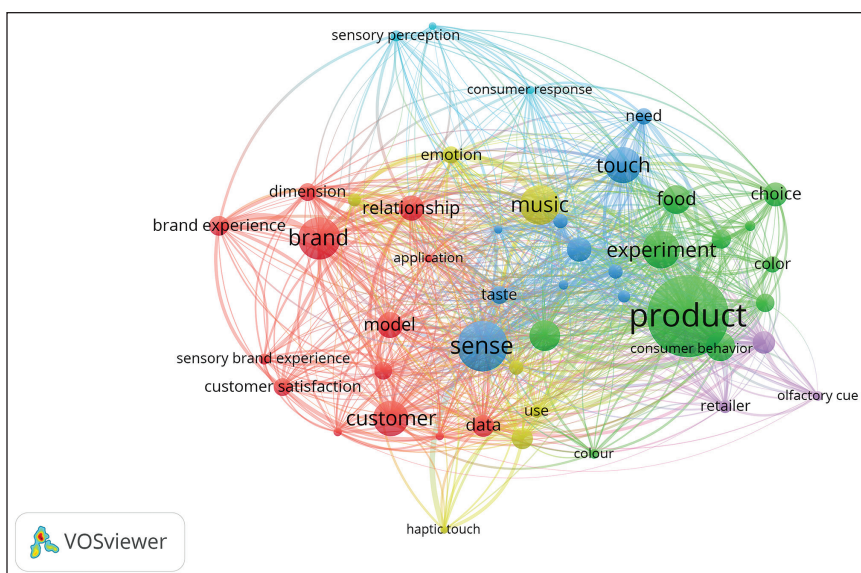


Figure 10. Word Cloud for Sensory Marketing.

a phenomenal increase in the frequencies. Various antecedents have been explored, which could be inferred from this word cloud that these studies of sensory marketing, like experiential marketing and brand experience.

Data Visualisation

In recent years, there has been an upward trend in study interest and concentration on sensory marketing and understanding consumer behaviour experiences. A thematic progression of the field is shown in this section. In information representation, network analysis is used to quantify the number of emanant bunches, the

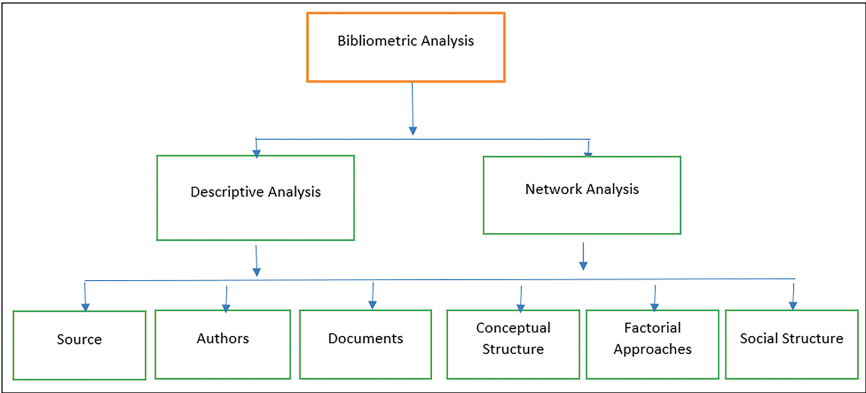


Figure 11. Bibliometric Analysis Levels.

Source: Aria, M., & Cuccurullo, C. (2017). Bibliometrics: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975.

events and connections between different research units, the general quality of connections and the number of citations. To extract the networks, several methods based on different analytic units—such as documents, authors and keywords—must be developed. Connections connect nodes in these networks. It conducts factual analyses of maps designed to display different organisational proportions (Aria & Cuccurullo, 2017). The logical planning done through the organisation examination comes full circle in three information structures: precisely reasonable construction, scholarly design and social construction (Figure 11).

Conceptual Structure

The reasonable design demonstrates how themes, subjects and patterns are related through co-event organisations or co-word research. This is the only way that the information in research articles is used. Consequently, an idea, a subject, or a set of widely used phrases constitute the unit of study. The Bibliometric programme determines this conceptual framework of the study field using multiple correspondence analysis (MCA). Multivariate nominal data may be graphically and numerically analysed using MCA (Greenacre & Blasius, 2006; Ingale & Paluri, 2020).

Co-occurrence Network

According to Figure 12, the author’s analytical keywords’ keyword co-occurrence network was created using Louvain’s 50-node clustering method with automated layout by default, normalisation by association, and normalisation by association. The terms known as ‘author’s keywords’ were derived by a computer program using frequently occurring words in document titles and reference lists. They are predisposed to do this because they more thoroughly and accurately capture

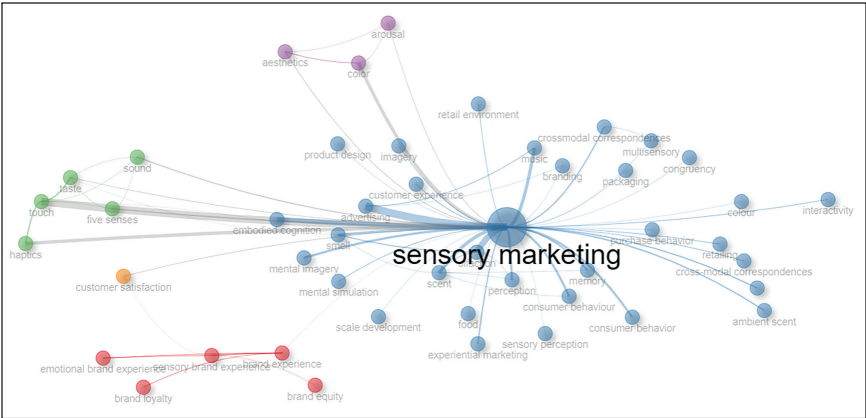


Figure 12. Co-occurrence Network.

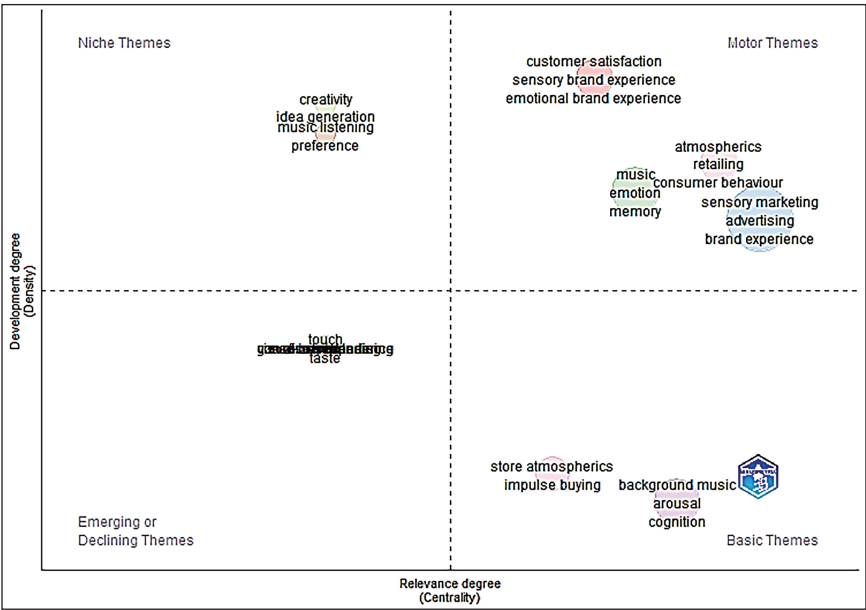


Figure 13. Time Slice 3- 2018–2020.

archival data (Garfield & Sher, 1993; Zhang et al., 2016). The information was used to create the four bunches shown in Figure 13 in red, purple, green and blue. Different colours represent these clusters; relatedness is shown by distance; words serve as the vertex, and the size of the node is commensurate to the frequency of the cluster. The red cluster emphasises brand experience, the blue cluster combines consumer behaviour, memory and perception, and the green cluster emphasises elements influencing consumer decisions, including music, pace and touch. The purple cluster is dominated by sensory marketing.

Trend Topics

Analysing popular subjects throughout time shows significant connections between topics. A logarithmic scale is used to plot the recurrence of key themes against distribution years in Figure 14. Analysing the last 5 years (2014–2022) reveals an engaging story. The conversation between 2014 and 2016 focused on atmospherics, shopping behaviour, and shopping experiences, suggesting that an emphasis on comprehending customer interactions and preferences within retail environments was present. Scent, music and shop atmospheres received more attention between 2016 and 2018, indicating a rising interest in the sensory elements of the retail environment and how they affect customer perceptions. From 2018 to 2020, cross-modal correspondences, aesthetics, background music and sound themes became popular subjects, highlighting how sensory cues are related and influence consumer behaviour. A behavioural approach was also stressed when analysing these occurrences. A discernible movement in strategy toward using tactile sensations and multisensory stimuli to engage customers better was shown in 2020 by the trend toward sensory marketing, touch and advertising. Ultimately, conversations in 2021–2022 focused on perception, mental stimulation, haptics and mental imagery, showing an increasing understanding of the influence of psychological and cognitive processes on customer behaviour in retail settings.

Thematic Map.

Typological themes are visually represented on a two-dimensional thematic map, as introduced by Cobo et al. (2011). Keyword clusters are identified through

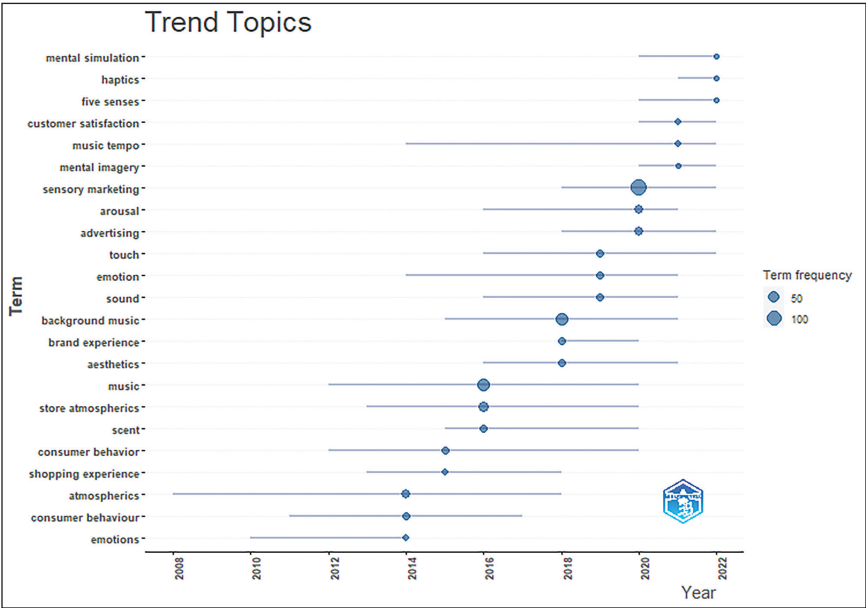


Figure 14. Trending Topics.

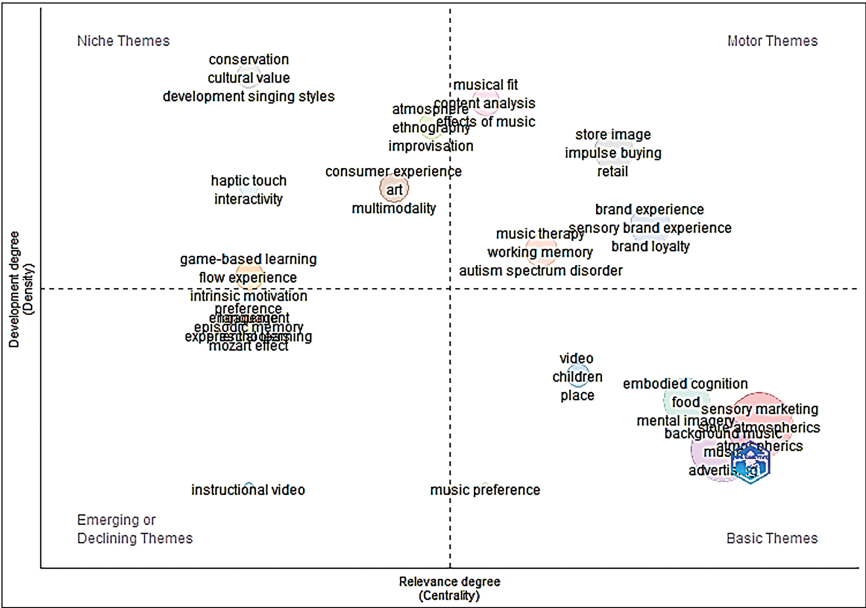


Figure 15. Thematic Map.

co-word analysis to construct these themes within the research domain. These themes are then classified into four quadrants on a two-dimensional graph, with density and centrality as the two defining dimensions. Each theme is depicted on the map as a bubble.

In Figure 15, bubbles represent the key themes such as ‘Sensory Marketing’, ‘sensory brand experience’, ‘customer satisfaction’, ‘five senses’, and ‘aesthetics’. The top right quadrant hosts the dominant theme, ‘multisensory’, characterised by its high density and centrality, signifying its central and extensively explored status within the discipline.

The theme ‘tangible promoting’ in the lower right quadrant is positioned, indicating its significance and highlighting that it requires further development.

The upper left quadrant features the niche theme ‘consumer experience’, which, despite being well-developed internally, possesses weak external connections and holds marginal importance.

Finally, the lower left quadrant encompasses the theme ‘neuroscience’, which is less essential and relatively developed, reflecting emerging and diminishing connections within the field (Aria & Cuccurullo, 2017; Huang et al., 2020).

Thematic Evolution.

Researchers have divided the total duration into discrete eras to understand the discipline’s development. This method enables us to look at advances in various topics and analyse how the field has changed over time. It uses a methodology based on the density and centrality of field components and keywords Della Corte et al., 2019).

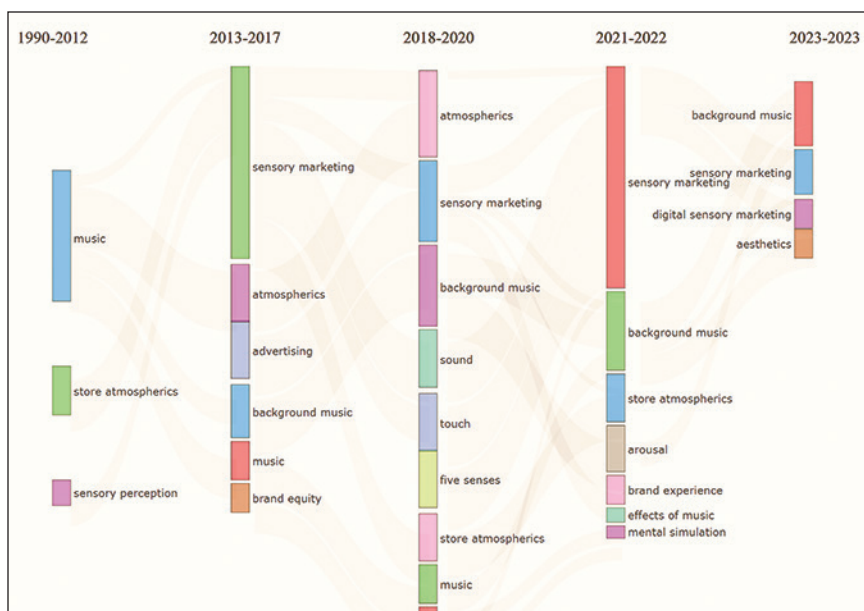


Figure 16. Thematic Evolution-three-field Plot.

A theme evolution analysis is utilised in our study to find keywords with a minimum group size of five, with an emphasis on a 400-word count inside the field (Figure 16). Separated by cutoff years in 1990 and 2023, we have separated the analysis into three temporal periods. Using this methodical approach, we can systematically look at themes and concepts and see how the area has developed over time (as illustrated in Figures 13, 16–20). The authors who participated in Time Slice 1 concentrated more on sensory marketing, sensory perception, shop atmospheres and other related themes (Figure 17); in Time Slice 2, however, they also concentrated on brand equity, advertising, sensory brand experiences and other related topics (Figure 18). Time Slice 3 focused on creativity, impulse buying, emotional brand experiences, idea generation and retailing (Figure 13); this also led to augmented reality, mental simulation, brand loyalty and the impact of music (Figure 19); Time Slice 5 focused on digital sensory marketing, mental imagery and aesthetics (Figure 20).

Factorial Analysis.

The factorial analysis-defined research clusters and the participants investigated within each are shown in Figure 21. Though overall, there is not much of a link between the clusters, several phrases stick out, like ‘brand experience’, ‘sensory brand experiences’, and ‘sensory perception’. Despite not having many relevant research articles specifically addressing these subjects, these phrases suggest that the academic community is still actively engaged in such study.

The goal of SNA was to promote connections within the topic of the study area. Hubs recommend entertainers, venues, distributors, or producers, for

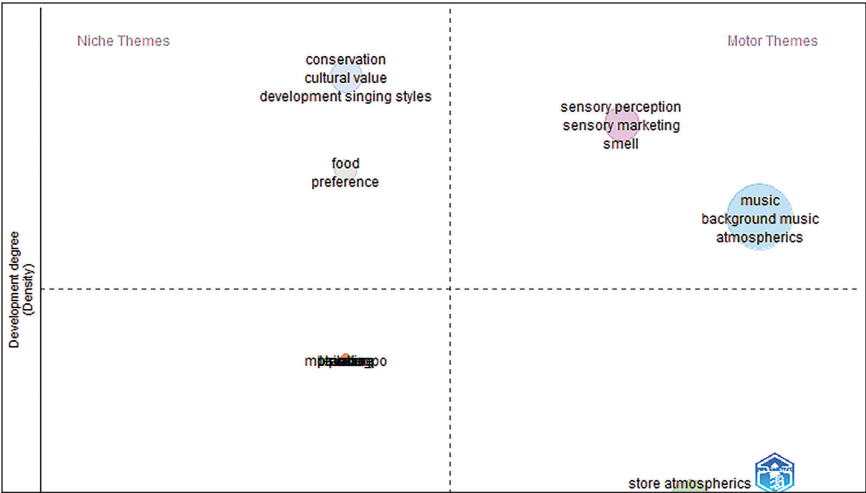


Figure 17. Time Slices 1- 1990–2012.

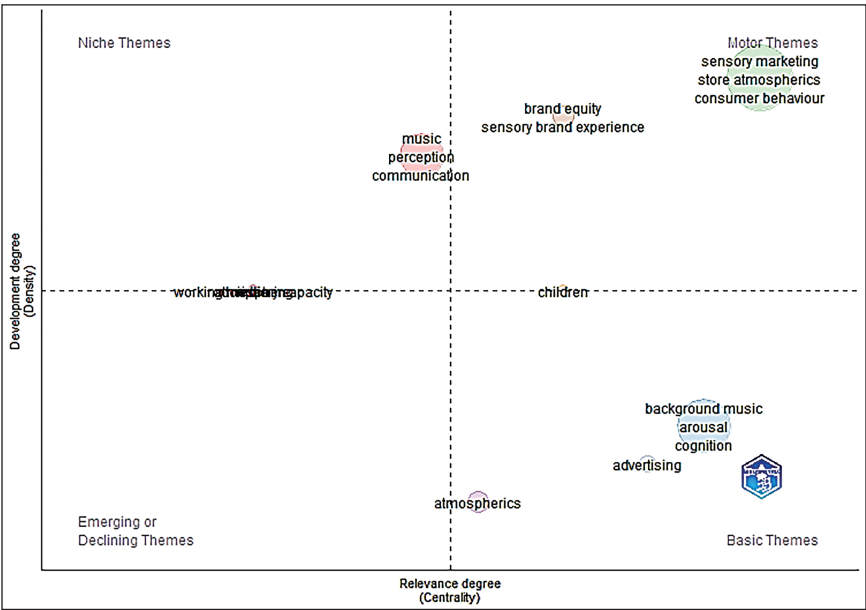


Figure 18. Time Slices 2- 2013–2017.

instance, and many show the related ties inside the unofficial organisation. These places are connected by linkages that address the components of the organisation. Geological diversity and teamwork were investigated using collaboration networks created in light of 24 countries (Figure 22). Concerning publishing production, the United States is the leading contributor with the most publications, holding the top spot. The United Kingdom comes in second place, followed by

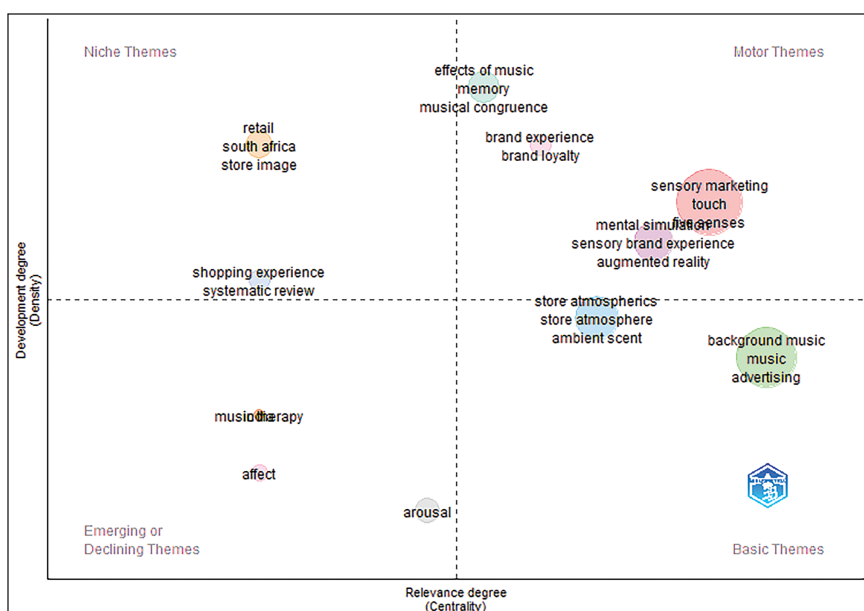


Figure 19. Time Slice 4- 2021–2022.

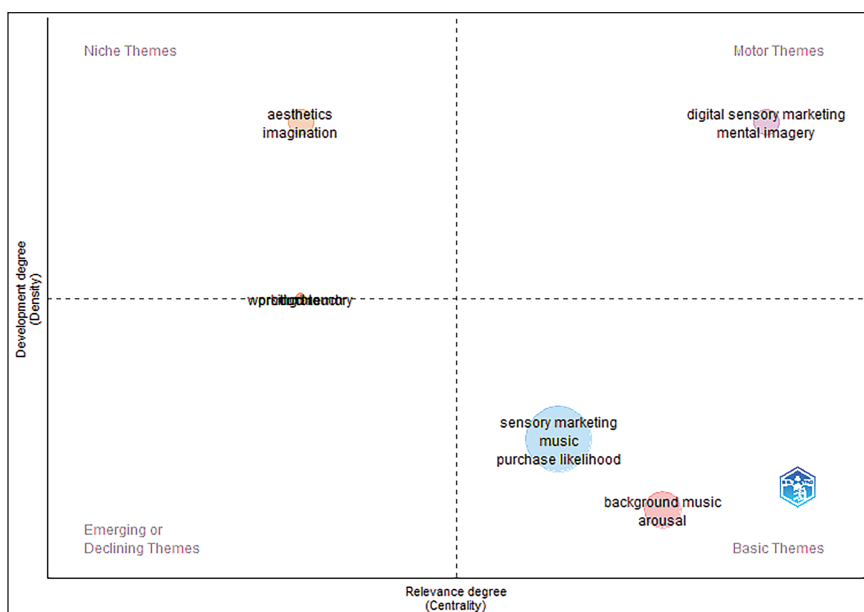


Figure 20. Time Slice 5- 2023–2023.

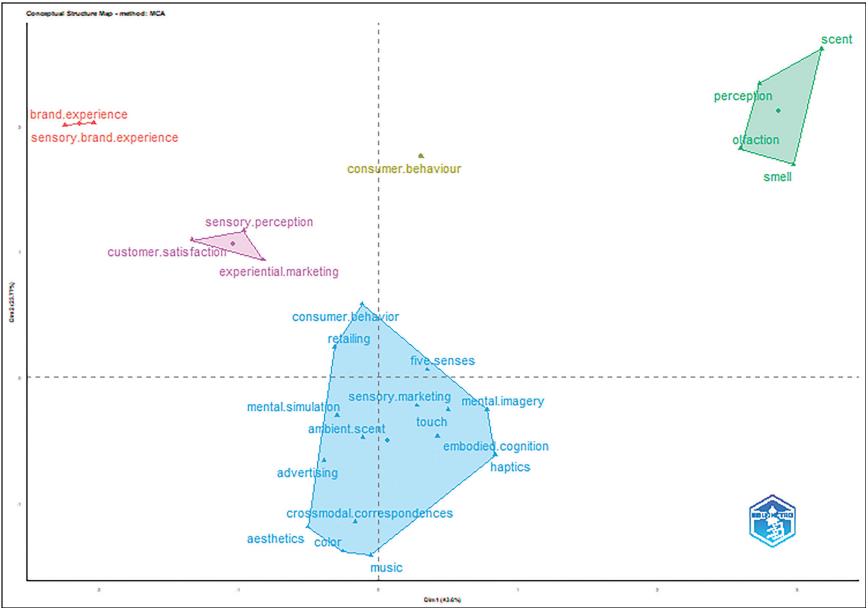


Figure 21. Bibliometrics Conceptual Structure Map—Factorial Analysis.

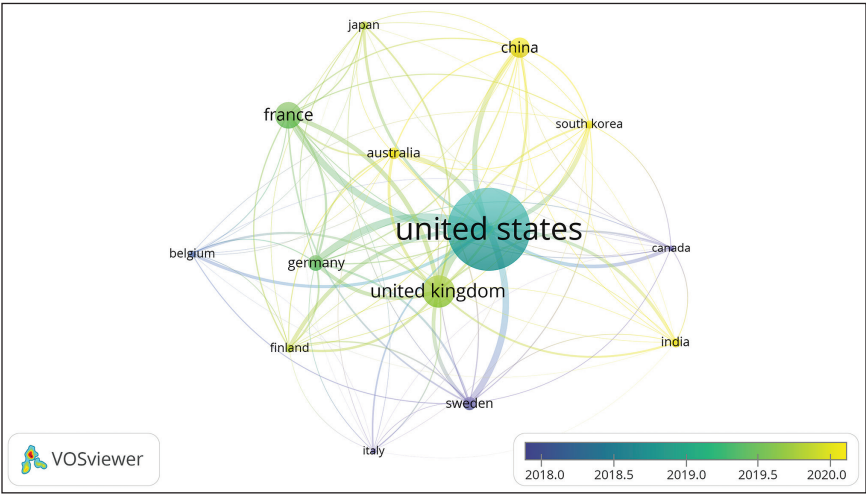


Figure 22. Geographical Collaboration Network.

France, which comes in third place. The above list highlights the noteworthy research endeavours and noteworthy contributions made by these nations to the discipline. From a provincial viewpoint, the USA overwhelms the insightful request and collaborates with many European nations and emerging economies. Variety in the information base is concentrated thoroughly through bunch

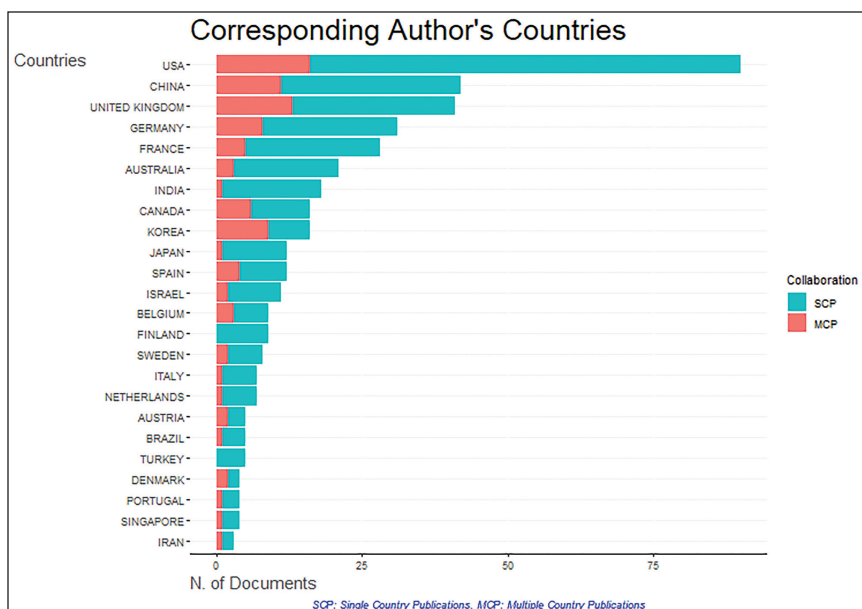


Figure 23. Corresponding Author's Countries.

examination. Assuming that a report is related to a specific group, inside that bunch, the texts are firmly connected through standard references (Aria & Cuccurullo, 2017). There were strong collaborations between researchers from the USA and scholars from China, the United Kingdom and Germany. In the second cluster, the domination is by China in association with India, France, Canada and Australia (Figure 23). UK, South Korea, Netherlands, Italy and Spain led the third cluster.

Conclusion

Theoretical Implication

The discipline of sensory marketing research has advanced significantly with the publication of this article. Although sensory marketing has been the subject of previous literature reviews, this one stands out for its creative application of bibliometric tools to synthesise and consider 33 years of research through a transdisciplinary methodology encompassing business, management, accounting, social sciences and psychology, the research endeavours to comprehend theoretical and topical concerns related to sensory marketing thoroughly. This inquiry takes a new strategy by using bibliographic coupling analysis, in contrast to other studies mainly concentrating on co-citation analysis. Finding insights beyond brand encounters, this approach enables the collection of more distinct data and offers a focused synopsis of sensory marketing. Additionally, by broadening the scope of the analysis to encompass almost five decades of research, the study provides a

more thorough understanding of the field's historical development. The study finds four unique quadrants within the literature on sensory marketing: digital sensory marketing, visual sense, consumer experience and neuroscience in customer encounters. Future study options are presented by each cluster, ranging from examining how digitalisation affects customer experiences to examining the function of taste in online purchasing environments. Through fostering cooperation with disciplines such as neurology, psychology and biology, the project seeks to further our knowledge of sensory marketing and open up novel avenues for investigation.

Practical Implications

The study aims to provide an in-depth evaluation of current sensory marketing knowledge, establishing an outline for practitioners and academics. This roadmap aims to help marketers use sensory marketing strategies more successfully. Additionally, the study verifies the efficacy of sensory marketing with real-world examples, such as Spence's results on the influence of sensory cues on restaurant dining experiences and Krishna's research showing how multimodal marketing improves product assessment and decision-making. Sensory marketing encompasses several fields, such as psychology and biology. Marketers must carefully craft strategies to influence customer behaviour, especially internet buying. As digital encounters increasingly supplant physical ones, organisations find it challenging to establish effective bonds with customers (Petit et al., 2019). Moreover, authenticity is essential in both online and offline interactions. The study's clusters provide valuable insights into developing trends and the possibilities of new technologies, particularly in digital sensory marketing. Furthermore, by comprehending multimodal interactions, practitioners may better utilise sensory signals in the design of their products, environments and marketing campaigns. Through global and cross-cultural observations—which included identifying China and the United States as the two most prominent countries in sensory marketing publications—the research offers actionable advice for businesses looking to comprehend the viewpoints of their global clientele and successfully negotiate cross-cultural marketing strategies. Finally, the study highlights how sensory marketing significantly impacts customer behaviour and how useful it is to use sensory components to create memorable brand experiences.

Limitations

The exploration was restricted to a survey of reports from the Scopus information base and bibliometric analysis, focusing on sensory marketing. Scopus is a dynamic database that continually updates. Search results may change when research is published, emphasising the need for awareness of this database's evolving nature. In order to predict future trends and create new models in sensory marketing, an empirical study can be conducted. The themes identified include digital sensory marketing, aesthetics, sensory perception, atmospherics, game-based learning and touch experience. These subjects will probably lead to future

exploration of tactile showcasing and might increase the value of researching their significance to advertisers observationally.

Future Research Directions

Gaps identified are presented in this section, which lay the path for future research. Customer involvement and affective commitment are critical to the success of sensory marketing (Dessart et al., 2016). Although sensory marketing has received sufficient attention, more in-depth research on multisensory experiences from the viewpoint of the customer is still needed. Future studies might examine the cultural and regional variations in consumers and the effectiveness of marketing tactics, as well as the ways in which these variations can be accounted for through multisensory experiences. Additionally, as digital sensory marketing has gained prominence, it is crucial to explore how emerging technologies shape consumer perceptions and preferences in this context, as technology significantly influences consumer behaviour and decision-making. This research can contribute to a deeper understanding of the complexities of cross-cultural marketing and the evolving landscape of digital sensory marketing.

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A Bibliometric and Literature Review on Unconventional Work Arrangements: Moonlighting

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Abstract

Traditional job security is no longer guaranteed in today's rapidly changing job market. The COVID-19 crisis has made this even more evident, leading many workers to look for additional jobs to meet their personal needs and secure a stable source of income. The COVID-19 crisis reshaped the job landscape, and unconventional work arrangements like moonlighting have gained popularity. This study focuses on 'moonlighting', where individuals take on extra jobs to secure their financial future. We conducted comprehensive research utilising both bibliometric and literature reviews. Our investigation involved analysing 177 relevant documents identified from the Scopus database spanning 45 years. Biblioshiny, an RStudio software, analyses and visualises connections between papers and research studies through network diagrams. The findings reveal 'Jean Kimmel' as the most productive and efficient author, and the United States stands at the forefront of moonlighting studies, with their research studies leading the way. Applied economics is the major source in the field of moonlighting. Our contribution to the area of moonlighting in India is new and scarcely researched and published. This concept in India is specifically of concern in the IT industry, where moonlighting is catching fire because of legality issues.

Keywords

Moonlighting, multiple job holdings, bibliometric analysis, financial security, job performance, job satisfaction

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Introduction

In today's environment, it is typical for someone to have a job. When someone holds a job, people are expected to show loyalty through long-term dedication. Downsizing, restructuring and layoff of employees have become more prevalent norms in organisations (Holbeche, 2015). The rapid advancement of science and technology contributes to generating new knowledge. Over the last few decades, numerous jobs focused on producing, processing and disseminating knowledge and information have surfaced. Initially, these roles were found exclusively within the high-tech and information and communication service industries, but they have since spread to encompass all other sectors (Satish et al., 2023). As a result, employees must now take an interest in their growth and potential for employment (Holbeche, 2015). One approach an employee adopts is moonlighting, which involves simultaneously holding multiple jobs (Kisumano & Wa-Mbaleka, 2017). Moonlighting occurs when a person does multiple jobs simultaneously (Husain, 2014). Moonlighting is referred to by various terms such as 'multiple job holding', 'dual job holding', 'second job holding' etc. Moonlighting has become more common as people seek additional jobs alongside their primary job (Jefferson & Nithya, 2023).

Several theories and models have been used to explain moonlighting, such as relative deprivation theory, aspiration theory and work-leisure choice theory (Adjei, 2013; Baah-Boateng et al., 2013; Betts, 2004; Kisumano & Wa-Mbaleka, 2017). Betts (2004) categorises moonlighting into economic and dispositional approaches, with economic theory focusing on primary income. The dispositional approach finds two theories to define moonlighters: deprivation theory and aspiration theory. Deprivation theory defines moonlighters as socially and economically deprived, while aspiration theory identifies individuals with higher aspirations and drives to find new jobs. Two main definitions describe moonlighters (Boateng, 1996; Boateng et al., 2013). First, the point definition focuses on a specific point in time, defining individuals as moonlighters if they work multiple jobs in a specific reference period. However, it does not consider concurrent occupations, which may include temporary transitional jobs or individuals with no intention to keep both jobs. Second, the duration definition considers the entire period, defining individuals as moonlighters if they work multiple jobs continuously or intermittently (Shishko & Rostker, 1976).

Moonlighting has been widely investigated in various fields such as teaching (Magadley, 2021; Ngwenya, 2021; Sakyi & Agomor, 2021), healthcare (Bruns & Pilkauskas, 2019; Muruga & Vasiljeva, 2021), politics (Caria et al., 2023; Hurka & Daniel, 2018; Hurka et al., 2018), police (Lippert et al., 2019) and IT (Doucette & Bradford, 2019; Sharma et al., 2021) sectors. Shishko and Rostker (1976) were pioneers in studying multiple job holdings. They combined theoretical reasoning with real-world analysis to understand why people engage in moonlighting, which refers to working multiple jobs. They built the first theoretical model of moonlighting. Later, Schwarze (1991) expanded on their work by incorporating job quality into the model. Conway and Kimmel (1998) examined the connection between the amount of labour individuals contribute to their primary and

secondary jobs. This study identified the motivations behind multiple job holdings and supported two main motives: 'hours-constraints' and 'heterogeneous jobs'. The length of time individuals engage in multiple job holdings was examined in studies conducted by Marshall (2002) and Kimmel and Conway (2001). These studies consistently revealed that the 'hours-constraint' motive is the most common reason for moonlighting, as individuals seek additional jobs to meet financial needs or personal goals. Averett (2001) investigated gender differences in moonlighting behaviour and wages, finding that motives may not differ significantly between men and women, but how they navigate multiple job holdings can vary. The primary drive behind moonlighting is to earn additional income, which can impact consumer preferences and buying behaviours. The pandemic presented organisations with a chance to secure loyal customers. It was an opportunity for managers to integrate corporate social responsibility (CSR) into their brand-building strategies (Menaga et al., 2023). The researchers point out that employing event marketing, media monitoring and customer loyalty programmes as marketing tools can effectively foster customer loyalty. Media marketing, in particular, is critical during the pandemic (Tomar, 2023).

Moonlighting has garnered attention from researchers, employers and policy-makers due to its implications for an individual's work-life balance, financial stability and overall well-being. With the changing nature of work and evolving employment patterns, understanding the motivations, consequences and dynamics of moonlighting is crucial. Exploring the reasons why individuals choose to moonlight, the impact on their primary job performance, the challenges faced in balancing multiple jobs and the potential benefits and drawbacks are essential areas of investigation.

Hence, our article aims to find out the following research questions.

- Q1. What is the overall publication trend in moonlighting research over time?
- Q2. Who are the most influential authors and sources in this field?
- Q3. Which journals, publishers and associations are the most influential in this field?
- Q4. What are the emerging themes and research areas within moonlighting research?

Methodology

In this study, we conducted a bibliometric analysis and literature review (LR) to provide an overview of the moonlighting domain. Bibliometric analysis is an effective method for uncovering and pinpointing research gaps within the existing literature (Duhoon & Singh, 2023). First, we performed LR to gather the data for bibliometric analysis by defining the specific keywords to retrieve the data from the Scopus database. We searched for relevant information by using specific keywords in the Scopus database. Then, we carefully selected papers that matched our criteria, following a structured approach called the PRISMA method. To collect bibliographic information, we accessed the Scopus database and focused on

articles published on moonlighting. We narrowed down our search by selecting specific categories that align with the current needs of businesses in the post-COVID-19 era. Next, we analysed the collected data using the bibliometric analysis technique. We used the Biblioshiny software of RStudio and the Bibliometrix package developed by Aria and Cuccurullo (2017) for bibliometric analysis. This allowed us to gain valuable insights from the articles related to moonlighting. Through our analysis, we discovered interesting patterns and trends in moonlighting research. We identified key authors who have contributed significantly, observed the number of papers published each year and explored the impact of different countries and authors. We also looked at collaborations between countries in this field. Bibliometric analysis will help us to identify the evolution of research themes and gaps that may guide future research scope in this area.

Defining Search Terms

In our bibliometric analysis, we employed a range of keywords to ensure a comprehensive search of the literature on moonlighting. These keywords included 'moonlighting', 'multiple job holding', 'second job holding' and 'dual job holding'. By using variations of these keywords, we aimed to capture diverse aspects and perspectives related to moonlighting. By including these varied keywords, we sought to encompass different terminologies and expressions used in the literature to describe moonlighting. This approach helps to ensure that our search is inclusive and captures a wide range of relevant studies.

Search Delimiting Criteria

On 5 June 2023, we collected data for this study (Figure 1). The search query included terms such as 'moonlighting', 'multiple-job holding', 'dual-job holding' and 'second-job holding'. We included the records spanning the last 45 years, from 1977 to 2023. Initially, the search yielded 1,770 references. To streamline the results and ensure the inclusion of highly relevant records, we further refined the search based on 'source types'. We excluded records from irrelevant areas such as agriculture, biological science, medicine and mathematics. Instead, we focused on selected areas such as social science, economics and finance, multidisciplinary, business management and accounting, psychology, and art and humanities. We focused on these categories because our research primarily considers the business perspective of moonlighting. After applying these subject area refinements, the number of records was reduced to 392. Then, we refined the results based on the 'document types'. We eliminated books and book chapters, including

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TITLE-ABS-KEY ( "moonlighting" OR " multiple job holding" OR " dual job holding" OR " second job holding" ) AND ( LIMIT-TO ( SUBJAREA , "soci" ) OR LIMIT-TO ( SUBJAREA , "econ" ) OR LIMIT-TO ( SUBJAREA , "mult" ) OR LIMIT-TO ( SUBJAREA , "busi" ) OR LIMIT-TO ( SUBJAREA , "arts" ) OR LIMIT-TO ( SUBJAREA , "psyc" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) OR LIMIT-TO ( DOCTYPE , "re" ) OR LIMIT-TO ( DOCTYPE , "ch" ) OR LIMIT-TO ( DOCTYPE , "cp" ) ) AND ( LIMIT-TO ( LANGUAGE , "english" ) )
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Figure 1. Screenshot of Search Query Used by Scopus Database to Retrieve Data.

Table 1. Bibliographic Data Retrieval Process.

Stage	Refining Criteria	Eliminated	Accepted
1	Initial retrieval recodes	–	1,770
2	Source type (social science, economies econometrics and finance, multidisciplinary, business management and accounting, psychology, art and humanities)	1378	392
3	Document types (article, review, conference paper)	19	373
4	Language (English)	11	362

Note: This table presents the steps incorporated to select the documents for bibliometric analysis.

only articles, reviews and conference papers. This refinement narrowed down the records to 373. To ensure the feasibility of reading and analysis, we included papers available only in English. After implementing this language filter and all previous refinements, we were left with a final set of 362 documents (Table 1).

Data Retrieval for Bibliometric Analysis and Systematic Literature Review

In the final set, we encountered a pool of 362 research works. To ensure clarity and maintain focus on the most relevant studies, we employed a rigorous process by using the PRISMA approach (Figure 2). First, we carefully analysed the keywords and abstracts of each article and eliminated 174 documents unrelated to this field. Then, the second stage of refining was performed after accessing the full-text papers, and those articles whose objectives did not match our study’s requisites were further eliminated. Some papers were inaccessible and thus eliminated from the study. Finally, we had 177 documents for bibliometric analysis and LR.

Result and Discussion

Year-wise Trends and Scientific Productivity

Figure 3 shows the annual production of articles, illustrating the research trend in publications since 1977. The figure demonstrates a consistent growth in the number of publications per year. On average, an annual growth rate of 3.97% indicates a steady increase in research activity. The year 2021 stands out with the highest number of publications, that is, 16 articles. This indicates a peak in research interest and activity during that year. Approximately 60% of the literature analysed in this study was published after 2009. Hence, it is evident that moonlighting has gained momentum after 2009. The period from 2011 to 2021 became the turning point where the number of publications increased.

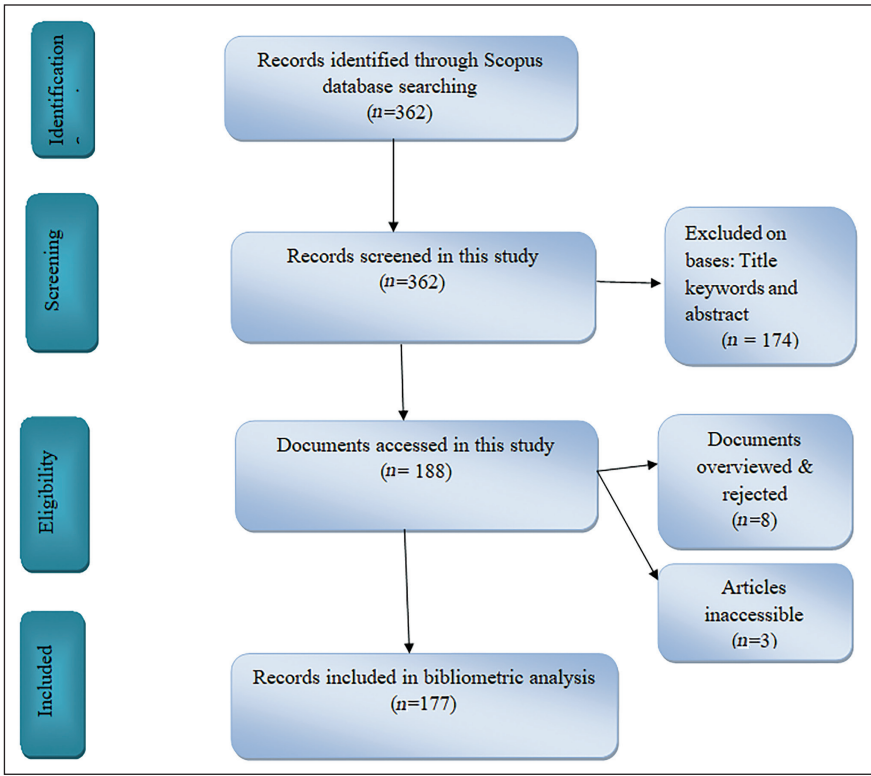


Figure 2. Inclusion Exclusion Criteria for Retrieval of Data for Bibliometric Analysis Using PRISMA Approach.

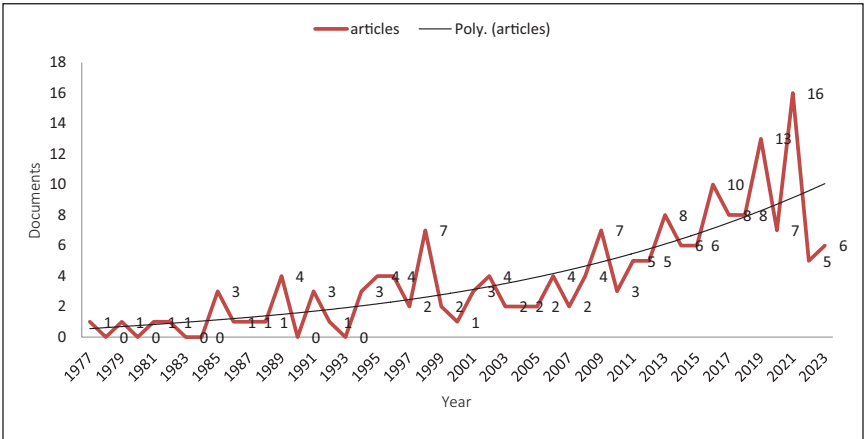


Figure 3. Annual Productions of Articles Published on Moonlighting.

Note: This figure presents the distribution of the shortlisted articles based on the year of publication.

Furthermore, a notable growth in the publications can be observed from 2019 to 2021. This may be attributed to the impact of the COVID-19 pandemic. During this time, job uncertainty heightened, and employees faced numerous financial, emotional and health challenges. These circumstances likely heightened interest in moonlighting research.

Influential Source Analysis

The top 10 most influential journals that have made significant contributions to the field of moonlighting are shown in Table 2. *Applied Economics* is the highest contributor, with seven publications related to moonlighting. Its substantial presence in the field indicates its strong commitment to publishing research on this topic. *Industrial Relations* is ranked the second highest contributor with four publications. John Wiley & Sons is the publisher of three journals in the top 10 list, so John Wiley & Sons is the most contributing publisher in this field. The top journals listed in Table 2 exhibit good impact factors. Three of these journals have an impact factor above 5, indicating the quality and influence of the selected articles published within these journals. The citation analysis indicates the influence and impact of the publication in terms of an h-index and m-index. *Applied Economics* is the most influential source based on the citations analysis matrix. So, *Applied Economics* is a highly contributing and influential source in the field of moonlighting.

Table 2. Top Influential Journals, Their Influence and Impacts.

Sr. No.	Source	Publisher	NP	JIF	H	G	M
1	<i>Applied Economics</i>	Taylor and Francies	7	2.3	5	7	0.128
2	<i>Industrial Relations</i>	Wiley	4	3.2	4	4	0.333
3	<i>Academic Psychiatry</i>	Springer	4	3.1	4	4	0.364
4	<i>Human Resources for Health</i>	BioMed	4	6.6	4	4	0.174
5	<i>Academic Medicine</i>	Lippincott Williams & Wilkins	4	7	4	4	0.121
6	<i>Plos One</i>	Public Library of Science	4	6	3	3	0.083
7	<i>Agricultural Economics</i>	Wiley	3	7	3	3	0.115
8	<i>Community, Work, and Family</i>	Routledge	3	4	2	3	0.25
9	<i>Labour Economics</i>	Elsevier	3	2.8	2	2	0.095
10	<i>Southern Economic Journal</i>	Wiley	3	2.3	2	2	0.105

Note: This table lists the top 10 journals with the name of publisher, the number of publications (NP), the journal impact factor (JIF) and the impact indices (h-index, g-index, m-index) as per the Scopus database.

Table 3. Top Influential Authors, Their Impact and Influence.

Sr. No.	Author Name	Affiliation	Country	NP	TC
1	Jean Kimmel	University of Washington	United States	4	161
2	Alexandros Zangelidis	University of Aberdeen	United Kingdom	4	133
3	Barry T Hirsch	Georgia State University	United States	3	45
4	John V. Winters	IZA(Institute of Labor Economics)	Germany	3	45
5	Angela Bruns	Gonzaga University	United States	3	34
6	Arjun Singh Bedi	Institute of Social Studies	Netherlands	2	101
7	Elizabeth M. Boyd	Indiana University-Purdue University Indianapolis	United States	2	58
8	Dewitt C Baldwin Jr	American Medical Association	United States	2	27
9	James Cox	Georgia State University	United States	2	52
10	William T. Daniel	Francis Marion University	United States	2	11

Note: This table lists the top contributing authors on moonlighting with a high number of publications (NP), their current affiliations and the total number of citations (TC).

Influential Author Analysis

The information about the most contributing authors on moonlighting is presented in Table 3. Jean Kimmel was the most productive and efficient author because she had the highest production and citations. Alexandros Zangelidis was the second productive author who wrote four documents with high citations. Arjun Singh Bedi, with two publications, is highlighted as an efficient author due to the highest average citation per year among top contributors. This indicated that their work had received many citations in the publication years. Furthermore, five authors had two publications each, demonstrating a notable contribution to the field. Four out of these five authors are from the United States, which aligns with the observation that the United States is among the most producing countries in the field of moonlighting.

Influential Document Analysis

Table 4 shows the top 10 documents that have made significant contributions to our topic. The paper titled ‘Wage Differentials Between the Public and the Private Sectors: Evidence from an Economy in Transition’, written by Arjun Singh Bedi and Vera Adamchik in 2000, had the highest number of citations. Jean Kimmel

Table 4. Top Influential Articles, Their Authors and Impact.

Sr. No.	Author Name	Documents Title	Year	TC
1	Arjun Singh Bedi and Vera Adamchik,	Wage Differentials Between the Public and the Private Sectors: Evidence from an Economy in Transition	2000	88
2	Jean Kimmel and Karen Smith Conway	Who Moonlights and Why? Evidence from the SIPP	2001	61
3	Alexandros Zangelidis et al.	Multiple Job Holding, Skill Diversification, and Mobility	2014	60
4	Jean Kimmel and Karen Smith Conway	Male Labor Supply Estimates and the Decision to Moonlight	1998	57
5	Gary Biglaiser, Ching-to Albert Ma	Moonlighting: Public Service and Private Practice	2008	53
6	Susan L. Averett	Moonlighting: Multiple Motives and Gender Differences	2010	50
7	Elizabeth M. Boyd and Michael T. Sliter	Two (or Three) Is Not Equal to One: Multiple Jobholding as a Neglected Topic in Organisational Research	2014	40
8	Alexandros Zangelidis et al.	Is It All About Money? An Examination of the Motives Behind Moonlighting	2011	38
9	Jean Kimmel and Lisa M. Powell	Moonlighting Trends and Related Policy Issues in Canada and the United States	1999	27
10	Alexandros Zangelidis and Ilias Livanos	Unemployment, Labor Market Flexibility, and Absenteeism: A Pan-European Study	2013	27

Note: This table lists the top 10 articles with the highest total citations (TC), their year of publication and their authors.

and Alexandros Zangelidis are two authors who wrote three documents, each with other authors, and received good citation counts. Table 4 shows Jean Kimmel as the most contributing and influential author in this field.

Influence and Collaboration Analysis of Affiliations and Countries

Affiliation analysis was conducted to study the contribution of significant universities and regions to our topic. Table 5 shows the top 10 universities based on the number of publications. The University of Aberdeen, located in the Netherlands, is the most influential affiliation, contributing the highest number of publications, that is, seven. Georgia State University from the United States follows closely, with the second-highest publications. The overall result of Table 5 indicates that universities in the Netherlands have shown significant contributions and have been at the forefront of publishing on this topic.

Table 5. Top 10 Influential Affiliations in Their Country and Impact.

Sr. No.	Affiliation	Country	Articles
1	University of Aberdeen	Netherlands	7
2	Georgia State University	United States	6
3	University of Queensland	Australia	5
4	Macquarie University	Australia	4
5	Oklahoma State University	United States	4
6	Tehran University of Medical Sciences	Iran	4
7	University of Amsterdam	Netherlands	4
8	Beijing Foreign Studies University	China	3
9	Charles University	Czechia	3
10	Erasmus University Rotterdam	Netherlands	3

Note: This table lists the top 10 affiliations with country and the number of publications.

Table 6. Top 10 Influential Countries, Their Impact, Influence and Collaborations.

Sr. No.	Country	NP	SCP	MCP	TC
1	The United States	31	27	4	406
2	United Kingdom	11	6	5	285
3	Germany	7	3	4	132
4	Australia	5	3	2	141
5	Canada	4	2	2	129
6	Georgia	4	0	4	89
8	Italy	4	4	0	93
9	Netherlands	4	2	2	8
10	Ghana	3	2	1	13

Note: This table lists the top 10 countries with the high number of publications (NP) and their single-country publications (SCP), multiple-country publications (MCP) and total citations (TC).

Most Influential Country Analysis

Table 6 enlists the top 10 countries with the highest number of publications in the field of moonlighting. The United States is the top contributing country with the maximum number of publications, that is, 31. The United States is also a highly impactful country, having the highest total citations and a keen interest in country publications. Multiple country production (MCP) indicates collaboration among countries, with the United Kingdom at the top, with five multiple countries producing. The United States and Germany have four MCPs, but if we compare the ratio with total articles, the United States is ahead of Germany. Georgia has shown a keen interest in collaboration, as all four of its publications involve collaborations with other countries. Italy has four publications but no collaborations with other countries.

Content Analysis of Literature

A content analysis of the literature published in the last 10 years (2013–2023) was performed, and three clusters were identified based on common themes. These three clusters represented distinct themes and knowledge domains within the literature, providing valuable insights into the intellectual structure and prevailing research trends from 2013 onwards.

The cluster was organised according to themes identified through document analysis presented in Figure 4. These themes were divided into four parts: emerging, basic, motor and niche themes. The first cluster was formed based on the basic theme, including topics such as moonlighting and self-employment and factors related to multiple job holdings. The second cluster was established based on the motor and niche themes, incorporating specific factors such as job performance, work conditions and labour dynamics in moonlighting. The last cluster was created to focus on motor and emerging themes.

Cluster 1: Moonlighting and Multiple Job Holdings

Cluster 1 investigates moonlighting and multiple job holdings, exploring motivations, determinants and implications in various contexts. Most studies show moonlighting as a source of additional income for employees (Asravor, 2020; Preston & Wright, 2020; Sakyi & Agomor, 2020). These studies show that the first motive for moonlighting is financial. Both men and women engage in moonlighting to deal with the financial difficulties faced because of lower earnings from their primary occupation (Piasna et al., 2020). The central premise is

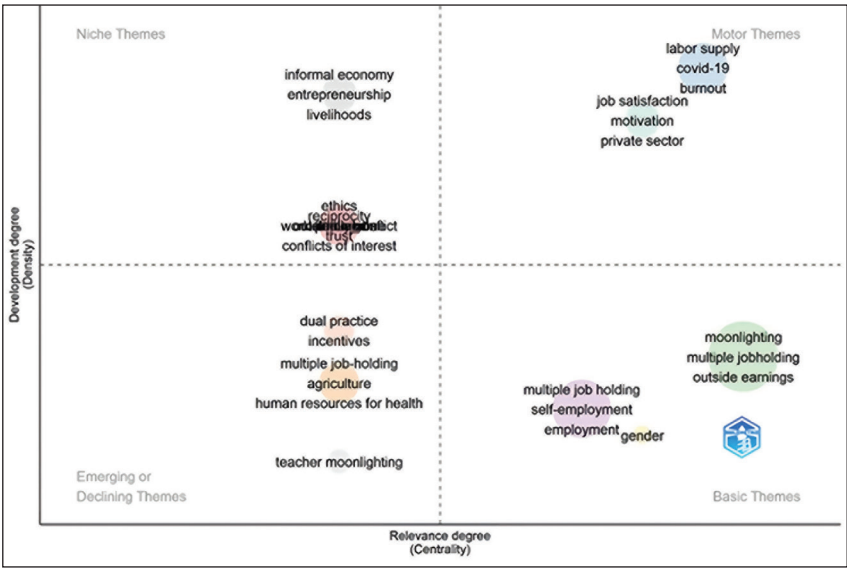


Figure 4. Clusters According to Documents.

that the earnings from the primary job are insufficient to meet individual, family or household needs. These studies revealed gender differences concerning the rationale for working in multiple jobs. Doucette and Bradford (2019) found that job hour constraints, a common reason for traditional moonlighting, motivated men to spend more time in secondary jobs to increase incomes, while women were motivated by insecurity in their primary jobs. Additionally, studies also explore the impact of moonlighting on organisational commitment (Khatri & Khushboo, 2014), work engagement (Peng et al., 2021), job satisfaction and burnout (Rasdi et al., 2021) and financial well-being (Quarshie et al., 2022). Bouwhuis et al. (2019) conducted a study in the Netherlands. They found no significant differences in health between multiple and single job holders, with multiple job holders experiencing less sickness absence. Magadley (2021) conducted a study in Israel that found work–family conflict among moonlighters, with women bearing a heavier burden. The cluster encompasses research from various geographical areas, including South Africa, Europe and the Czech Republic.

Cluster 2: Job Performance, Work Condition and Labour Market Dynamics in Moonlighting

Cluster 2 focused on how people perform their jobs, their working conditions and how the job market behaves. It includes research on various professions such as teaching, IT, police and politics. One area of this cluster focused on how work conditions affect job performance. Ngwenya (2021) revealed that poor work conditions, including low remuneration and heavy workloads, negatively impact teacher performance, as inadequate compensation and excessive workload negatively affect job satisfaction. Better work conditions lead to fewer employee complaints as they become happier with their work conditions than the IT sector employees. It also reduces absenteeism and increases productivity (Roelofsen, 2002). Other studies revealed that a safe and comfortable workplace can significantly impact employee's well-being and overall performance (Eluka & Okafor, 2014; Ogbo & Ukpere, 2013). Another aspect of this cluster explores the employment situation. It looks into unemployment rates, labour market flexibility and how these factors influence employee behaviour. Shishko and Rostker (1976) revealed that every rational worker who faced dissatisfaction with their current job's working hours and wanted to maximise their utility might consider adding a second or third job. However, this possibility is feasible only when there is a very high level of flexibility in employment. Owusu (2005) indicated that civil service employees have the highest rate of moonlighting because they offer a very high level of flexibility in employment. Several studies have been done on moonlighting determinants; they have looked mainly at factors such as time constraints (Shishko & Rostker, 1976) and financial constraints (Guariglia & Kim, 2004). One more factor in employment security has considered the push factor of moonlighting (Nunoo et al., 2018; Renna & Oaxaca, 2006).

Cluster 3: Politics, Government and Public Policy

Cluster 3 revolves around politics, government and public policy. First, the cluster analyses citizen's responses to politicians engaging in moonlighting. In many countries, including the UK, countries of the EU and Germany, Members of Parliament (MPs) are allowed to have other jobs, either paid or unpaid, alongside their roles in parliament (Agrawal & Knoeber, 2001). The permission for MPs to have sideline jobs varies from country to country, and each country's parliament may have its own rules and regulations regarding this practice (Geys & Mause, 2014). Some professions that could create conflicts of interest were banned for MPs, such as lobbyists, consultants and those directly involved in industries (Allen, 2008). Another aspect explored in this cluster is public policy issues on health system development and employment security. In recent years, dual practice has become a prevalent trend in the healthcare industry, particularly among physicians, nurses, midwives and technicians (Gonzalez, 2004; Jan et al., 2005). The income disparity between specialists in the public and private sectors has been a critical driving force behind this practice, promoting healthcare professionals to explore opportunities in both domains simultaneously (Joyce & McGrail, 2014). One significant revelation from studies is that residents across various disciplines express a solid desire to moonlight to supplement their income, advance their education and foster greater independence and self-confidence (Jamshidi & Reilly, 2008; Matthews et al., 1998). Moreover, a comprehensive study indicated no difference in perceived quality of life or financial distress between residents who moonlight and those who do not (Bayat et al., 2018). These findings suggest that moonlighting does not compromise the well-being of healthcare professionals.

Future Scope

After thoroughly reviewing the existing literature, I see that this area has continuously grown. However, some gaps require further investigation through in-depth research. In existing literature, we observed that moonlighting practices have been studied in various professions, including healthcare, education and IT (Bruns & Pilkauskas, 2019; Doucette & Bradford, 2019; Magadley, 2021; Sakyi & Agomor, 2021; Sharma et al., 2021). However, there is a need to delve deeper into understanding the specific factors that drive moonlighting in each of these sectors and its implications on professionals and the industry itself. After reviewing, it was evident that moonlighting practices increased significantly after the COVID-19 pandemic, especially with the rise of remote work. Future research is essential to better understand the impact of digital transformation and freelance work on multiple job holdings. Most empirical studies used panel data from different points in time, so future studies may utilise another source of data collection, like primary data collected directly from the respondents through questionnaires, interviews, focus group interviews and thematic and sensitivity analysis, to have a broader understanding of the concept. Most studies focused on the financial and

economic perspectives of moonlighting, and a few studies were oriented towards the behavioural aspects of moonlighting. So, future research could work on behavioural dimensions like work–life balance, motivation, quality of life, etc. Most studies used a quantitative research design that measures the panel data. Only a few studies used qualitative research design, so future researchers could use qualitative research design and pay attention to understanding people's stories and experiences. Further, in the analysis of cluster 1, we assessed that the demographic variables directly impact moonlighting behaviour. So, future researchers should assess the impact of different demographic variables on employees' moonlighting behaviour to determine the role of these variables in moonlighting.

Conclusion

The study synthesised existing literature on moonlighting using bibliometric analysis and LR. Key factors contributing to growth include workplace flexibility, curiosity-driven skill enhancement and quality of life.

In bibliometric analysis, we found that *Applied Economics* and *Industrial Relations* were the top journals in our lists. Jean Kimmel contributed maximum literature on moonlighting. The University of Aberdeen had the most influential affiliation, and the United Kingdom and the United States were highly producing countries.

Three clusters were extracted based on content analysis. Cluster 1 mainly focused on moonlighting motives, determinants and implications. Cluster 2 tested the impact of work conditions and labour market dynamics on employees' job performance. Cluster 3 described the response of the public and government to moonlighting practices in different professions and addressed policy issues related to health system development. These clusters will help researchers to choose their area of interest for future studies. Lastly, we identified future research avenues to guide the researchers' investigations.

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Towards an Integrated Framework of Antecedents and Outcomes of Organisational Ambidexterity

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Abstract

Ambidexterity is critical for organisations' technological advancements and competitive advantage. The prior literature is fragmented and uses multiple constructs that impede the development of conceptual understanding and an integrated framework of antecedents and outcomes of organisational ambidexterity. This study uses a systematic review of 47 empirical studies to categorise its antecedents in each stream that relate to the impact of human resources (employee characteristics, social relationships) and organisational (organisational structure and environment) factors on ambidexterity. Further, this study also identifies different research streams that are linked to the outcomes of ambidexterity, such as individual level, team and department level, firm level and organisational level outcomes. The author discusses key findings in relation to their antecedents and outcomes, which will support the conceptual clarity of researchers and practitioners. By using methodological analysis, this review might provide new possibilities for future studies. This study further proposes an integrated framework that elucidates each stream of antecedents and outcomes of ambidexterity. This review provides a conceptual framework and research direction for forthcoming research on ambidexterity.

Keywords

Organisational ambidexterity, systematic literature review, integrated framework, antecedents and outcomes, exploration & exploitations, human resource factors,

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Introduction

The current dynamic business world is characterised by technological advancements and tough competition. During this changing era, firms must constantly develop their existing skills in a world of intense competition while simultaneously developing new skills by discovering new methods to be more competitive than their rivals. Considering these requirements, ambidexterity is also of high importance in business management. Ambidexterity is described as the ability to pursue exploitative activities that emphasise the exploitation of present resources and their improvement, efficiency and execution while engaging in explorative activities that emphasise discoveries, versatility and invention. Researchers and professionals from various disciplines are fascinated by ambidexterity due to the increasing popularity of this concept in the existing literature (Günsel et al., 2018).

Much research has been conducted on the antecedents of ambidexterity (Günsel et al., 2018; Koryak et al., 2018; Salas-Vallina et al., 2021) and the impact of ambidexterity on business, firm and individual performance (Günsel et al., 2018; Katou et al., 2020; Zhang et al., 2019). Even with all these studies, researchers are still trying to figure out what causes ambidexterity and what effects it has. In particular, it is still unclear to what extent HR and organisational factors contribute to ambidexterity (Junni et al., 2015), and the consequences of ambidexterity are poorly understood. Therefore, the integrated framework lacks the antecedents and outcomes of ambidexterity. A systematic management of ambidexterity is impossible without understanding these antecedents and outcomes. For developing a structured approach to ambidexterity, prior knowledge of antecedents and outcomes is especially valuable because it can support managers in identifying the most suitable antecedents and determining the best combination of antecedents based on the needs of the organisation. As a result, an integrated framework represents a system for managing ambidexterity.

After looking at the research on ambidexterity, the article suggests an integrated conceptual framework that includes its causes and effects. This systematic review is an in-depth look at the topic. It looks at the causes and effects of ambidexterity, including how they affect these factors and what effects they might have. This article gives managers a full picture of ambidexterity, helps them understand what factors affect it, and helps them think about what could happen. Furthermore, the study suggests potential future research opportunities for researchers and practitioners.

Other literature reviews have also been found in the literature, but they either aren't current or only indirectly relate to ambidexterity, so that's why our current study focuses on the literature regarding organisational ambidexterity antecedents and outcomes. A study by Junni et al. (2015) that analyses the literature from 2005 to 2014 and analyses 41 empirical papers, taking forward the research of Junni et al. (2015) and adding some new perspectives and points for further investigation into this area, will be the objective of this article.

Our next section describes the methodology, followed by a detailed review of the antecedents and the outcome of organisational ambidexterity. Further, using the research review, the study constructed a key findings table, a methodological analysis and an integrated framework of the role of factors in organisational ambidexterity and its leading outcomes. The authors summarise the key findings, identify key gaps in research and suggest future research directions.

Review Methodology

According to Webster and Watson (2002),

review of prior, relevant literature is an essential feature of any academic project. An effective review creates a firm foundation for advancing knowledge. It facilitates theory development, closes areas where a plethora of research exists, and uncovers areas where research is needed.

The systematic review process was used to reach the article's goal. The study started by examining the literature on the concept of ambidexterity. High-quality journals and databases like Emerald, Springer, John Wiley & Sons, Sage, Taylor & Francis and Google Scholar were used to compile the research for this article. A set of selection criteria was used to select similar articles. First, the keywords 'ambidexterity' or 'organisational ambidexterity' and 'antecedents of ambidexterity or organisational ambidexterity' or 'outcome of ambidexterity or organisational ambidexterity' or 'exploration and exploitation' are used to locate relevant articles. The year of publication was used as a second inclusion and exclusion criterion. The current study looked at papers published between 2015 and 2021. Using the above-mentioned filters, the researcher first found 442 papers in the databases. The titles of these articles were studied, and 180 papers were deemed appropriate based on their titles. The abstracts of these papers were then reviewed, and 47 empirical papers were found to be directly linked to this study. Among the 47 empirical studies, 5 were qualitative (interviews and case studies) and 42 were quantitative (data collection and statistical analysis). These studies were mapped to observe the general research trend in this area. In Figure 1, the study presents the number of publications reviewed between 2015 and 2021. Furthermore, Figure 1 also presents the distribution of research by type of analysis (quantitative or qualitative). An increasing trend shows that the topic is still of interest. Each study featured a considerable quantity of data, so the researcher constructed a table to compare these studies. The major components of these studies were divided into the following sections:

- Paper details (author and year of publication)
- Methodology and sample information
- Antecedents of organisational ambidexterity
- Outcome of organisational ambidexterity
- Key findings

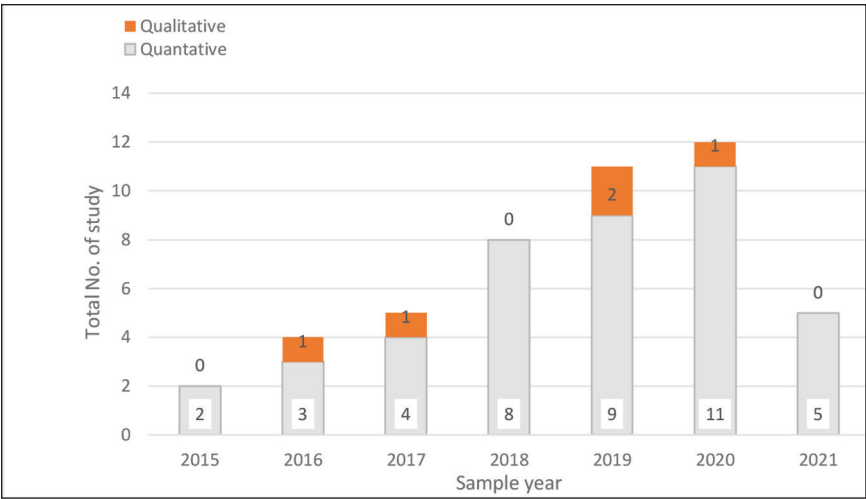


Figure 1. Number of Research in the Sample per Year and Research Method.

Literature Review

Organisational Ambidexterity’s Antecedents

Many studies have examined the antecedents and factors leading to organisational ambidexterity. We also examined many other variables to uncover the antecedents. This study classified the antecedents of organisational ambidexterity in the prior studies from 2015 to 2021 using Junni et al.’s (2015) framework of human resources (HR) and organisational antecedents of ambidexterity. Junni et al. (2015) conducted a review that provides a comprehensive model of surveys that examined the HR and organisational antecedents of ambidexterity up to 2014.

Because there have been a significant number of studies since then, we extended this approach by analysing the studies from 2015 to 2021. Table 1 contains a list of 47 studies.

Many researchers suggest that to effectively develop ambidexterity in organisations, managers need human resource management (HRM) practises and systems. For example, Salas-Vallina et al. found that to effectively *develop ambidexterity in organisations, managers need human resource management practises and systems*. For example, Salas-Vallina et al. (2021) propose that work units are better able to undertake simultaneous exploration and exploitation activities when HR practises are geared towards employees’ well-being and a unit-level capacity for organisational learning exists. Additionally, Úbeda-García et al. (2016) suggest that when developing an HRM system, managers must consider policies such as comprehensive employee recruitment, training and performance appraisals, as well as equitable compensation arrangements, to promote organisational ambidexterity.

Further, they have found that high-performance work system (HPWS) adoption creates an environment that can facilitate ambidexterity, both direct and indirect,

Table 1. Antecedents and Outcomes of Organisational Ambidexterity.

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Prieto-Pastor and Martin-Perez (2015)	Survey of HR managers and CEOs in 182 companies from Spain.	HIHRs, management support	Firm's ambidextrous learning	HIHRs had a positive connection to ambidextrous learning and confirmed management support's moderating effect.
Fu et al. (2015)	Survey of 91 HR managers in China.	HPWSs	Firm performance	A positive association exists between HPWS and OA. The findings also revealed an inconsistent link between OA and organisational performance.
Úbeda-García et al. (2016)	Survey of 100 HR managers in Spanish hotels.	HPWSs	Organisational performance	Using HPWS is a great way to develop the ability to learn with both hands, which leads to better organisational performance.
Chen et al. (2016)	Survey of CEOs, TMTs and middle managers in 144 manufacturing firms in China.	Executive SHRM system, TMT effectiveness, knowledge-sharing intensity		The executive SHRM system partly mediates the impact of TMT effectiveness on OA.
Garaus et al. (2016)*	Case study using 23 employees semi-structured interviews, internal documents and web pages of three high-tech manufacturing industries in Austria.	IHRP or ambidextrous HRM system		Work practises promote formal integration, while employment practises establish social integration. Formal and social integration functions allow company-wide cooperation and collaboration. IHRP lays the groundwork for a 'common frame of reference' that is supported by integrative employment practises and strengthened by cooperation, facilitating the knowledge integration of structurally differentiated units to be explored and exploited.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Chang (2016)	The surveys of 184 unit managers and 346 unit employees in firms in Taiwan.	Unit experience of HPWS, empowerment climate (firm-level), transformational leadership (firm-level)		The association between unit HPWS and unit OA was moderated by the firm-level empowerment culture and encouraged members to participate in both exploratory and exploitation creativity at the unit level.
Ajayi et al. (2017)	Surveys of 398 shop-floor employees in the Nigerian manufacturing and services industries.	Organisational context and employee engagement		Aspects of the organisational context can make it easier for employees to contribute to both the current and future competitive edge of their organisations, and employee engagement makes it easier for employees to be ambidextrous.
Plimmer et al. (2017)	A survey of 11,619 employees in 56 public sector organisations in New Zealand.	HIWS, organisational systems	Organisational performance	HIWS is not directly related to organisational ambidexterity, in contrast to organisational systems that are significantly connected to organisational ambidexterity. Both organisational systems and OA were mediating the HIWS' association with organisational performance.
Rosing and Zacher (2017)	Using a one-day or weekly diary questionnaire of 59 and 37 employees in Australia.		Innovative performance	Individual ambidexterity changes over time, and this change is linked to differences in how innovatively people perform over days and weeks.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Caniëls et al. (2017)	The online survey included 136 employees in five Belgian service sectors.	Culture of empowerment, knowledge sharing culture, intrinsic and extrinsic motivation		A culture of empowerment is significantly linked to ambidexterity, whereas an information-sharing culture has no meaningful association with ambidexterity.
Malik et al. (2017)*	Case studies, using interviews and documentary data, of two healthcare firms in India.	HIHRMP, efficiency-driven HRM practices	Innovations	HIHRMP is used for idea exploration, and HRM practises that are efficiency-driven are establishing contextual ambidexterity. Furthermore, training has been crucial to establishing an ambidextrous environment that delivers on various innovations among these healthcare practitioners.
Siachou and Gkorezis (2018)	Survey of 219 employees in three IT SMEs in Greece.	Empowering leadership, perceived organisational support (POS), role ambiguity		POS and empowering leadership are favourably connected through contextual ambidexterity. The link between empowered leadership and contextual ambidexterity is facilitated with POS.
Úbeda-García et al. (2018)	A survey of 100 HR managers or the CEO in Spanish hotels.	HPWSs, AOC	Organisational performance (hotel performance)	HPWSs and AOC are positively associated with organisational ambidexterity, and HPWSs have an indirect effect on OA, which is partly mediated by AOC.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Cegarra-Navarro et al. (2018)	219 workers from 188 Spanish banks were interviewed using structured questionnaires.	Ambidexterity context	Affective commitment	The impact of the context of ambidexterity on affective commitment via exploratory practises is statistically insignificant, and the impact of exploitation on affective commitment is statistically significant.
Günsel et al. (2018)	Surveys of 210 managers and employees of 105 SMEs in Turkey.	Organisational discipline, organisational trust, organisational support	Firm performance (quantitative, qualitative)	Discipline and support are positively associated with organisational ambidexterity, while trust has no effect on it; organisational ambidexterity has a favourable effect on firm performance.
Úbeda-García et al. (2018)	Survey of 100 HR manager and CEO in Spanish hotels.	HPWS, human resource flexibility (HRF)	Firm performance (hotel industry)	HPWS leads to create an appropriate context for ambidexterity, both directly and indirectly through HRF, which is positively related to organisational performance.
Luu et al. (2018)	Survey of 461 employees of Vietnam companies.	Ambidextrous leadership, public service motivation	Customer value cocreation	Individuals' ambidexterity among frontline public employees was positively correlated with ambidextrous leadership. Individual ambidexterity has a favourable connection with customer value creation.

(Table 1 continued)

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Authors	Data Sources	Antecedents	Outcomes	Key Findings
Koryak et al. (2018)	Top executives from 422 UK SMEs were surveyed.	TMT heterogeneity, TMT size, written vision, R&D intensity, continuous improvement		TMT heterogeneity is linked to ambidexterity and its elements, but not to size. Vision is linked to ambidexterity and its elements, but R&D intensity is only linked to ambidexterity and exploration. Continuous improvement is also beneficial for explorative and exploitative tasks.
Soto-Acosta et al. (2018)	A survey of middle and senior managers in 429 SMEs in Spain in manufacturing companies.	Information technology (IT) capability, environmental dynamism and knowledge management capability	Firm performance	Innovative ambidexterity is linked to information technology capability, knowledge management capability and environmental dynamism. Environmental dynamism amplifies the favourable impact of innovation's ambidexterity on business success.
Caniëls and Veld (2019)	A survey of 160 employees in the Dutch Defence organisation.		Innovative work behaviour	Exploration and exploitation, as well as specialisation at a higher degree, are both advantageous to innovative work behaviours.
Mom et al. (2019)	In total, 467 operational managers and 104 senior managers from 52 Taiwanese financial services organisations were surveyed.	Firm human resource practices		Opportunity-enhancing HR initiatives establish the bottom-up link between operational managers' ambidexterity and organisational ambidexterity.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Schnellbacher et al. (2019)	Surveys of 415 German employees.	Organisational architecture, organisational context	Team performance, department efficiency, department effectiveness	The context and organisational architecture had a positive impact on individual ambidexterity. Individual ambidexterity is positively related to departmental effectiveness, efficiency and team performance.
Chams-Anturi et al. (2019)	377 workers at organic agro-food firms in Spain were surveyed.	Organisational trust	Firm performance	Organisational ambidexterity mediates the link between organisational trust and firm performance.
Malik et al. (2019)*	Case study, using 7 employees Interviews, organisational documents, information and news items US MNC subsidiary operating of Semicon in Bangalore, India.	HRM practices, leadership style ('mirroring competencies' and 'parallel processing'), management practices (risk-taking and trust)	Product innovation	Ambidextrous leadership, risk-taking and trust culture management practises, as well as efficiency-focused and empowerment-oriented HHHRM practises, can all contribute to creating an ambidextrous workplace favourable to product innovation.
Dezi et al. (2019)	A survey of the CEOs of 119 ceramic tile SMEs in Italy.	Knowledge management, external embeddedness	Firm performances	Knowledge management is essential for balancing the effects of external embeddedness on a firm's ambidexterity, which improves the performance of SMEs.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Park et al. (2019)	A survey of 105 HR managers in the R&D centres of Korean firms.	HCHRM system, HR capability		HCHRM has a favourable association with HR capability, abilities and behaviours, which are linked positively to an ambidextrous technical innovation.
Zhang et al. (2019)	A survey of 245 employees and their supervisors in a high-tech company in China.	Handling work stress, trust-building	Individual performance	Individual ambidexterity acts as a link between the two antecedents of dealing with job stress and developing trust in individual performance.
Swart et al. (2019)	In total, 35 semi-structured interviews and a survey of 212 employees of a professional service firm in the UK.	Level of seniority, Individual actions		Senior employees are more inclined to adopt integration, 'tone-setting' and 'role expansion', whereas employees with a specialised understanding of their clients apply 'gap filling' to support ambidexterity.
Wilms et al. (2019)	Survey of 101 top managers in Germany.	Paradoxical frames, cognitive integration, cognitive differentiation		Top managers' paradoxical frameworks promote cognitive distinction and integration. However, top executives' paradoxical frames, are not highly associated with OA. The relationship between paradoxical frames and organisational ambidexterity is mediated by top managers' cognitive divergence and integration.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Souza and Takahashi (2019)*	Case study using in-depth interviews, 15-year documentary research and nonparticipant observation of a private Brazilian university.	Dynamic capabilities (DC), organisational learning (OL)		The results suggest that the activities of sensing, seizing and changing DC are affected by the founders and managers. Novel academic and administrative procedures have been developing, and at the HEI, an OL procedure was completed, resulting in a beneficial exploration and exploitation (OA) balance for the organisation.
Katou et al. (2020)	A survey of 657 employees in 99 organisations in Greece.	Leader's social intelligence, external environmental (dynamism, competition), employee's work engagement	Organisational performance (creativity and productivity)	The benefits of exploitation activities on productivity, SMEs firms, employee work engagement and leaders' social intelligence have a favourable impact on creativity via exploration activities. In contrast, the beneficial effect of dynamic environmental change on creativity via exploration activities is lower than the favourable impact on productivity via exploitation activities.
Mert Gürlek (2020)	A survey of 462 senior hotel managers in Istanbul and Antalya, Turkey.	HPWVs, intellectual capital		HPWVs enhance OA through intellectual capital.

(Table 1 continued)

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Authors	Data Sources	Antecedents	Outcomes	Key Findings
Affum-Osei et al. (2020)	A survey of 443 service personnel from Ghana's three telecommunications firms was conducted.	Career adaptability resources	Service performance	Ambidextrous behaviour and service performance are significantly related to career adaptability. Although POS is linked to ambidexterity, ambidexterity affects service performance through a process known as career adaptability.
Yu et al. (2020)	A survey of 770 nurses in 48 units of an Australian hospital.	Attitudes towards efficiency–flexibility ambidexterity, transformational leadership, subjective norms, self-efficacy	Employee performance	Individual qualities such as frontline service employees' attitudes, perceptions of others' assessments of their activities, and self-efficacy have a significant impact on frontline employees' efficiency—flexibility ambidexterity.
Chams-Anturi et al. (2020)	In the Spanish business, 239 general managers and quality managers were surveyed.	Enabling formalisation, organisational trust, coercive formalisation		Formalisation and organisational trust are both positively linked to ambidexterity, and they found that trust, which acted as a moderator, had different effects on different types of formalisation and ambidexterity.
Schnellbacher and Heidenreich (2020)	Survey of 415 German employees.		Knowledge accumulation, department performance	At the departmental level, ambidextrous knowledge seeking and providing has a substantial influence on knowledge acquisition and performance.

(Table 1 continued)

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Authors	Data Sources	Antecedents	Outcomes	Key Findings
Shahzadi and Khurram (2020)	Survey of 308 employees of pharmaceutical corporations in Pakistan.	Self-efficacy	Innovative work behaviour	Individual ambidexterity aids in the mediation of the relationship between self-efficacy and innovative work behaviour; whereas formalisation weakens it.
Sahi et al. (2020)	A survey of managers or owners in 192 SMEs in north India.	Strategic orientations	Business performance	Operational practises that are exploratory and exploitative have a significant influence on business performance. Market orientation has little impact on exploitative operational activities, but entrepreneurial orientation has a significant impact on exploitative operational activities.
Zhang et al. (2020)	A survey of 278 employees in 3 IT companies in China.	Competitive orientation	Task performance	Employee exploration and exploitation both have a favourable influence on task performance.
Venugopal et al. (2020)	In 78 Indian SMEs, 240 TMT members and 233 management executives were surveyed.	TMT behavioural integration	Firm financial performance	The study found that combined ambidexterity is a mediator between behavioural integration and business performance.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Waheed et al. (2020)	A survey of 300 employees in the National Database and Registration Authority in Pakistan.		Innovation performance	Employees who have a high rate of IT ambidexterity are more engaged in innovation. When IT ambidexterity is high, the effects of NHRM practises on innovation performance are larger than when IT ambidexterity is low.
Raiden et al. (2020)*	A case study based on in-depth interviews with 14 male academics in Sweden and the United Kingdom.		Performance and well-being outcome	The author identified three identity groups that affected the characterisations derived from the researcher's interpretation: high achievers, core workers and unhappy. High achievers are made up of high performers with varied well-being outcomes; the core worker group consists of teachers who have a history of using exploitation in conjunction with strong performance and well-being outcomes; the dissatisfied cluster includes those who reported low well-being outcomes regardless of whether they used exploration or exploitation.
Nobakht et al. (2021)	A survey of CEOs and managers in 214 firms in Iran.	Open innovation, entrepreneurial orientation		Open innovation and an entrepreneurial attitude are positively related to organisational ambidexterity.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Pertusa-Ortega et al. (2021)	Survey of top managers in 365 Spanish hotels.	QMPs	Hotel performance	QMPs help set up organisational ambidexterity, or the ability to manage both exploitation and exploration operations, which leads to better hotel performance.
Mayanja et al. (2021)	A survey of owners and managers in 285 SMEs in Uganda.	Personality traits, entrepreneurial networks, novelty ecosystem		Entrepreneurial ambidexterity was linked in a good and important way to personality traits, the novelty ecosystem and entrepreneurial networking. The novelty ecosystem mediates the association between personality traits, entrepreneurial networking and entrepreneurial ambidexterity.
Peng and Lin (2021)	Survey of in charge or the supervisors in 234 mechanical, electronics and electrical manufacturers in Taiwan.		Organisational performance organisational tension	Exploration and exploitation have a favourable effect on the performance of the organisation. Organisational ambidexterity had a good effect on performance but negative impacts on organisational tension.

(Table 1 continued)

(Table 1 continued)

Authors	Data Sources	Antecedents	Outcomes	Key Findings
Salas-Vallina et al. (2021)	A survey was given to 507 people who worked in 151 specialised medical units in 54 public hospitals in Spain.	WOM, organisational learning capability		There is a favourable link between WOM and ambidexterity at the unit level. Furthermore, organisational learning capability mediates the relationship between unit-level ambidexterity and WOM.

Source: Literature review from 2015 to 2021.

Note: * Denotes qualitative studies.

Abbreviations: high-involvement HR systems (HIHRs), high-performance work systems (HPWSs), organisational ambidexterity (OA), top management team (TMT), integrative HR practices (IHRP), high-involvement HRM practices (HIHRMP), ambidextrous organisational culture (AOC), high-commitment HRM system (HCHRM system), quality management practices (QMPs), well-being-oriented management (WOM), role breadth self-efficacy (RBSE), intrinsic motivational orientation (IMO).

through HR flexibility (Úbeda-García et al., 2018b). Seminal contributions have been made by several researchers, for instance, Fu et al. (2015), Chang (Chang, 2016), Úbeda-García et al. (2018a) and Gürlek (2020).

Additionally, previous studies have emphasised that the high-involvement work system (HIWS) enhances ambidexterity. For example, according to Malik et al.'s (2019) data, Semicon employed both efficiency-oriented and empowerment-oriented HRM practises to establish an ambidextrous environment for its employees. The authors discovered that high-involvement HRM practises were used for exploring new ideas, along with efficiency-driven HRM practises, to create contextual ambidexterity (Malik et al., 2017). Additionally, Garaus et al. (2016) defined 'an ambidextrous HRM system as a particular type of HPWS that facilitates the continuous integration of exploration and exploitation in the pursuit of increased flexibility and efficiency'. Further, they said that HRM systems with ambidextrous capabilities permit a firm to handle the opposing tasks of exploration and exploitation within the context of a 'common frame of reference' and the capability to coordinate knowledge. Furthermore, numerous studies have investigated whether organisational discipline, support, trust and context facilitate ambidexterity in organisations (Chams-Anturi et al., 2019; Günsel et al., 2018). Ajayi et al. (2017) indicate that the 'organisational context elements (knowledge sharing, adhocracy, clan culture and organic structure)' will reinforce employees' capability to simultaneously add to their organisations' competitive advantage in the present and future. Schnellbacher et al.'s 2019 findings indicate that organisational architecture and organisational context promote ambidexterity in individuals.

As a result, Indian small and medium enterprises (SMEs) follow strategic orientations to strengthen operational ambidexterity (Sahi et al., 2020). Furthermore, Dezi et al. (2019) and Soto-Acosta et al. (2018) consider knowledge management and the external embeddedness orientation of firms to be important contributors to ambidexterity, exploitative innovation and exploratory innovation. They also found that, when it comes to the environment, environmental dynamism and innovative ambidexterity are both good things. Recent studies have indicated that employee attitude and behaviour, manager leadership style and top management team (TMT) characteristics positively affect organisational ambidexterity. Zhang et al. (2019) have proved that handling work stress and building trust are two antecedents that influence the process and capabilities of individual ambidexterity.

Shahzadi and Khurram's (2020) research shows that employees with high self-efficacy can balance conflicting tasks and healthcare workers' attitudes and expectations of others. Yu et al.'s (2020) research also shows that self-efficacy is a major factor in determining efficiency-flexibility ambidexterity. Katou et al.'s (2020) research suggests that leaders who are socially aware and good at managing relationships can help with both exploitation and exploration. According to Mayanja et al.'s (2021) research, employees with high self-efficacy can balance conflicting tasks and healthcare workers' attitudes and expectations of others. Yu et al.'s (2020) research also shows that self-efficacy is a major factor in determining efficiency-flexibility ambidexterity. Katou et al.'s (2020) research suggests that

leaders who are socially aware and good at managing relationships can help with both exploitation and exploration. According to Mayanja et al. (2021), when SME owners and managers provide a degree of freedom for their employees to achieve desired goals, entrepreneurial ambidexterity is likely to flourish. According to Venugopal et al.'s (2020) results, 'the meta-construct of TMT behavioural integration with the sub-processes of TMT cooperation, information sharing and collaborative decision-making' increases the integrated and equalising aspects of ambidexterity.

Organisational Ambidexterity's Outcomes

Many empirical studies have investigated organisational ambidexterity in several organisations across different countries. These studies demonstrate a favourable impact of organisational ambidexterity on organisational performance, individual performance, product innovation and innovative work behaviour. As an organisation becomes more ambidextrous, it will achieve better results, so ambidexterity is a crucial characteristic of organisations that attain high performance (Chams-Anturi et al., 2019; Fu et al., 2015). Additionally, an organisation's ambidexterity can mediate the connection between organisational trust and organisational performance and help reduce organisational tension (Peng & Lin, 2021). Furthermore, Katou et al.'s (2020) study defined performance as a synthesis of the following two distinct constructs: productivity and creativity. According to research, exploration tasks are independently linked to creativity, whereas exploitation tasks appear to be more closely related to productivity. Based on the findings of Sahi et al. (2020), Indian SME enterprises are engaging in both exploratory and exploitative activities, which, in turn, result in better business performance. Additionally, individual ambidexterity improves performance at different levels within an organisation, namely at the levels of the team and department (Schnellbacher et al., 2019). In Zhang et al.'s (2020) research, employees' exploitation and exploration both contribute to their task performance. Furthermore, using HPWS is appropriate for developing ambidextrous learning abilities, which results in improved organisational performance (Úbeda-García et al., 2016, 2018). Additionally, exploitation and exploration activities can be developed and lead to ambidexterity, and then hotel performance can be improved (Pertusa-Ortega et al., 2021).

Furthermore, the results indicate that the efficiency-flexibility ambidexterity of employees improves their performance as well (Yu et al., 2020). Schnellbacher and Heidenreich (2020) discovered that participation in ambidextrous knowledge-seeking and providing enhance departmental success and knowledge accumulation. Prieto-Pastor and Martin-Perez (2015) found that High-involvement HR systems (HIHRs) influenced the employees' ambidextrous behaviour, which in turn facilitated and partly mediated ambidextrous learning. Affum-Osei et al. (2020), found that employees who sense more organisational assistance are more willing to engage in ambidextrous behaviour to provide excellent service. As a result, employees' ambidextrous behaviours were positively related to their service

performance. Similarly, Luu et al. (2018) discovered a favourable link existed between employees' ambidexterity and customer value creation. Malik et al.'s 2019 study found that Semicon's leaders are ambidextrous and that management practises lead to increased product innovation. Healthcare practitioners report that training is critical for diverse innovations and provides an ambidextrous environment for innovation (Malik et al., 2017). Shahzadi and Khurram (2020) found that innovative work behaviours are determined by self-efficacy, and the performance of innovation is higher when employees have high IT ambidexterity (Waheed et al., 2020). Furthermore, Caniels and Velds (2019) response surface analysis indicates that specialising in one of two exploratory or exploitative actions is advantageous for innovative work behaviour when the imbalance between exploration and exploitation is examined.

Methodology Analysis

Researchers examined the papers used in this study and discovered some general methodological trends. The researcher found most studies (89%) collected data by survey method (questionnaire), as shown in Table 1. Only 11% of studies have used interviews (either semi-structured, structured, or in-depth interviews) to get information from the people they wanted to learn about. The author discovered that the interview method is used the most in case studies. Only two studies used the interview method, but these are not case studies (Cegarra-Navarro et al., 2018; Swart et al., 2019). Furthermore, the research revealed 38 papers that collected data from single respondents. Of these 38 studies, 19 collected data from owners, top managers, HR managers and CEOs, and 19 collected data from employees. Only four studies collected data from multi-level respondents. Two of these studies collected data from managers and employees, one from managers and supervisors, and the other two from senior and operational managers. There are very few studies of multi-level respondents because there may be difficulties in data collection with multi-level respondents.

At the next level, the researcher notices that people are becoming more interested in the idea of organisational ambidexterity's causes and effects. Figure 2 shows that the majority of these 22 research studies have been conducted in European nations. The other studies have been conducted in Asian (18), African (3), Australian (3) and American (1) countries. According to our review, only one study was conducted in American countries.

An Integrated Framework of Antecedents and Outcomes of Organisational Ambidexterity

The key variables examined in the literature as antecedents and outcomes of organisational ambidexterity are illustrated in Figure 3. General observations show employee characteristics, HR practises, HR systems, organisational culture,

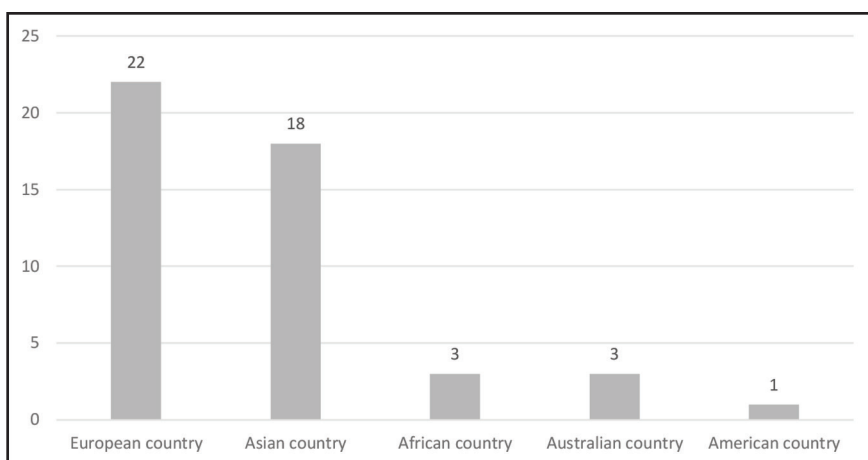


Figure 2. Continental Distribution of Studies.

context and trust are the main factors that determine ambidexterity. The study suggests that employee characteristics (self-efficacy, individual action, handling work stress and employee engagement) help employees achieve their ambidexterity. The author further contends that leaders' social intelligence and their ambidextrous leadership—transformational leadership styles that promote leaders' competence and motivation to successfully handle the ambidexterity problem at various levels—improve ambidexterity.

Also, the study showed that HRM practises and HRM systems have a big impact on how well employees and leaders are inspired to be ambidextrous and how well they help employees and leaders develop the skills they need to be ambidextrous. Furthermore, the study suggests that workers who believe in their organisations' support and trust them work ambidextrously. Ambidextrous organisational culture plays a significant role in the formation of contexts that are suited for organisational ambidexterity. Furthermore, elements of the organisational context (sharing of information, adhocracy, clan culture and organic structure) can increase the capacity of employees to simultaneously contribute to the existing and potential competitive edge of their organisations. Furthermore, the study suggests that workers who believe in their organisations' support and trust them work ambidextrously. Ambidextrous organisational culture plays a significant role in the formation of contexts that are suited for organisational ambidexterity. According to the study, organisational factors like organisational ambidextrous context, trust and an ambidextrous organisational culture all play an important role in enhancing ambidexterity.

Moreover, other elements that enhance ambidexterity, such as information technology capabilities, knowledge management capabilities and external embeddedness, serve as supporting variables for ambidexterity. Further, the study contends that individuals' organisational learning and dynamic capabilities can build and maintain a balance between exploration and exploitation.

This study's main point is that ambidexterity is attained when employee characteristics, leader behaviour and organisational elements work together to support it. Furthermore, the study revealed that organisational ambidexterity is a

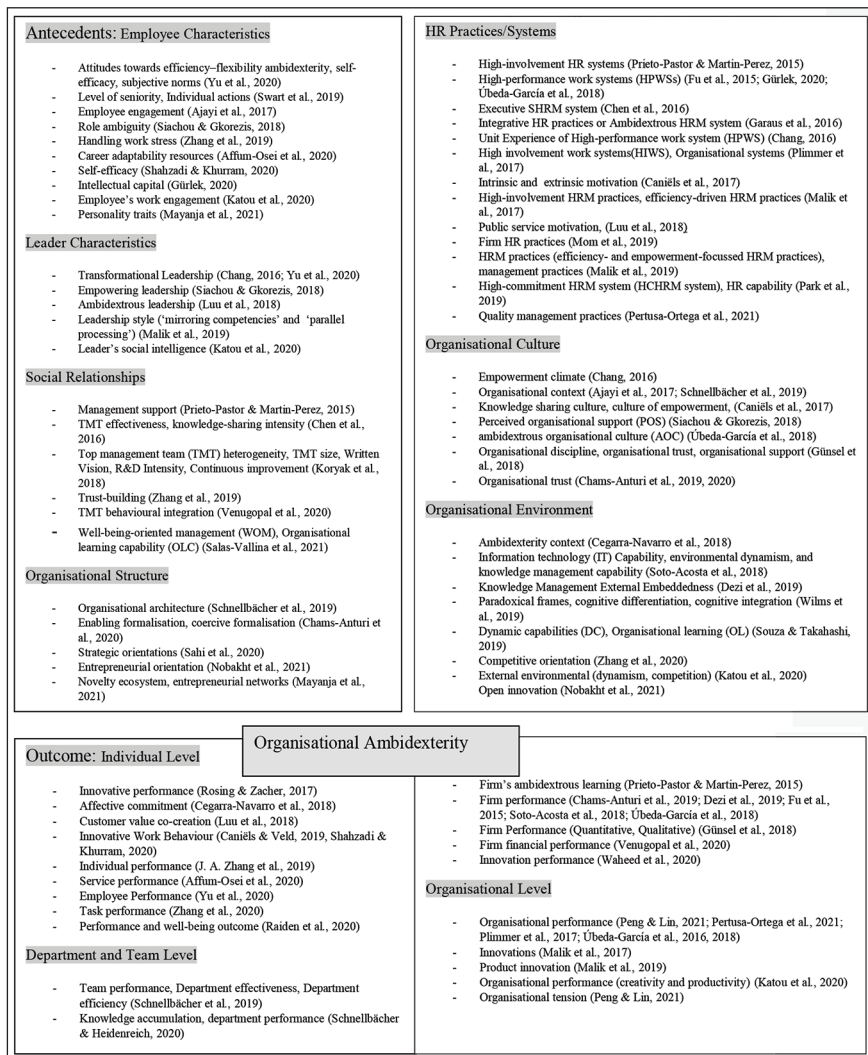


Figure 3. An Integrated Framework of Antecedents and Outcome of Organisational Ambidexterity.

vital ability for organisations to attain better performance: the more ambidextrous an organisation, the better its degree of performance. Moreover, individual ambidexterity contributes to departmental performance, effectiveness, efficiency and team performance.

An ambidextrous environment is also good for different kinds of innovations: innovative performance, innovative work behaviour and innovative product results. Furthermore, ambidextrous behaviour supports employees' efforts to aid in customer value co-creation. As a result, the author suggests that ambidexterity reduces organisational tensions and improves individual, employee and overall organisational performance.

Discussion, Conclusion and Future Research Direction

This study contributes in different ways. It first backs up the finding of Junni et al. (2015) that affecting factors of ambidexterity are still fragmented because of their use of multiple-level phenomena and different theoretical perspectives. Second, an analysis of the literature suggests that multiple constructs are used by researchers, such as employee ambidexterity, individual ambidexterity, contextual ambidexterity, entrepreneurial ambidexterity and organisational ambidexterity, that help practitioners understand the concept of ambidexterity. Third, we discovered that employee and manager characteristics, HR practises and systems, social relationships, organisational structure and the environment all influence organisational ambidexterity. Next, organisational ambidexterity leads to individual, team, departmental, firm and organisation-level outcomes. These findings have further implications for managers and theory, as well as opening up new research topics. This study assists managers in identifying the critical factors that promote ambidexterity at various levels. In addition, managers cultivate ambidextrous behaviour in their staff and improve their innovative behaviour and performance. Thus, the findings of this study led the researchers to conclude that organisational ambidexterity improves technological advancements and competitive advantages, which in turn improve individual, firm and organisation performance, thereby assisting organisations in innovative work behaviour and product and service innovations. Further, after researching a significant corpus of literature on the topic, the researcher revealed gaps in previous studies. Based on an analysis of the 47 studies listed above, most were done in European and Asian countries. This means that future studies should focus on Africa, Australia and the United States. Further, Indian studies in this domain are still in their nascent stages. In addition, to support these ideas, more empirical research should be done. While researching the literature, the author also discovered that there aren't many multilevel and multi-nation studies. As a result, there's a need to further investigate the phenomenon at various levels and outside of national borders in order to determine its significance in the global market. Examining how cultural and environmental factors affect the global market may be interesting. Furthermore, from a micro-foundational standpoint, globalisation offers an intriguing context in which different ambidexterity models in both developing and developed nations may be made conceivable.

The author found that few studies collect qualitative data from respondents. So, future studies may collect more qualitative information from employees and managers to understand the ambidexterity phenomenon and its importance in organisational performance. More case studies and other qualitative research are needed to gain a clear understanding of the phenomenon and determine its impact on firm and organisational performance. As a result, individual, organisational and societal significance, as well as academic and research implications, are predicted to emerge through relative exploration.

While assessing and drawing conclusions, the shortcomings of the research should be clearly stated. This study includes only empirical studies that were published from 2015 to 2021 and written in English. As a result, the abovementioned shortcomings should be addressed in future research.

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