



Decoding Employee ambidexterity: Understanding drivers, constraints, and performance implications for thriving in the evolving work landscapes - A scoping review

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ABSTRACT

Employee ambidexterity (EA) is becoming increasingly recognised as a significant factor in enhancing individual and organisational performance across diverse industries. Ambidexterity refers to the capacity to exploit and explore organisational resources simultaneously. Scholars from diverse industry sectors have been motivated to delve deeper into the topic of EA due to its growing popularity. The objective of conducting a scoping review was to scrutinise the existing literature and identify the key drivers and constraints that impact EA to thrive in the changing work landscape. The insights gained from this review can assist decision-makers in formulating effective strategies to cultivate the ambidexterity skills of their workforce and achieve desirable outcomes. This review adheres to the PRISMA-ScR protocol. Articles were obtained from databases including Scopus, Web of Science, and EBSCOhost (Academic Search Complete, Business Source Complete). The body of literature concerning EA is in its nascent stage. 23 articles assessing EA's performance outcomes were identified using targeted search terms and thorough screening. After conducting a thorough thematic analysis using the iterative categorisation (IC) technique, tailored for scoping a review, we successfully identified twenty-nine factors contributing to the enhancement of EA, meticulously organised into five distinct categories: organisational factors, social connectedness, employee behaviour, employee personality, and work environment related factors. Similarly, we discovered four factors that impede EA: functional tenure, team identification, bounded discretion, and conscientiousness. Our findings underscore the profound impact of employee ambidexterity on distinct types of performance. Among the sixteen types of performance reported to be enhanced by EA, ten are linked to individual performance, while six are tied to organisational performance. Notably, our analysis revealed that nearly all studies have relied on cross-sectional research methods except for one. However, we advocate for the exploration of longitudinal studies as they hold the promise of offering a more comprehensive understanding of EA. The paper presents valuable insights into how to cultivate ambidextrous capabilities in the workforce for unparalleled success in today's rapidly evolving work environment. Additionally, it identifies several intriguing avenues for future research that could further elucidate and bridge existing knowledge gaps.

1. Introduction

Employees' ability to use information system features known to them, termed *exploitative activities*, while simultaneously exploring new features, called *explorative activities*, is described as ambidexterity ([1,2]). From a broader perspective, ambidexterity could also mean an individual's specific skills to perform incongruous tasks and switch mindsets [3]. Ambidextrous capabilities help employees simultaneously explore and exploit organisational resources ([2,4]). The groundbreaking work of March [5] posited that exploitation relates to old certainties and is the mundane performance of what employees already know. In contrast, exploration is about new possibilities and manifests through seeking innovative ways of performing tasks.

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Employee ambidexterity (EA) is gaining momentum as a significant component for boosting individual and organisational performance. With the increasing prevalence of flexible and remote work arrangements, there has never been a more crucial time to embrace EA. In the future of work, the digitalisation of organisations is expected to continue, which makes it essential for employees to engage in “lifelong learning, upskilling, and adaptability” to stay relevant in their roles [6]. By embracing EA, employees can ensure they remain highly effective in their jobs, and organisations can achieve long-term success in the ever-evolving workplace. Moreover, with the highly dynamic business environments and increasing technological turbulence, ambidextrous employees are a mandate for the growth of organisations. They can ensure the optimal use of organisational resources [7].

Dolz et al. [8] applied the ambidexterity concept to organisations and found organisational success was associated with the capacity to be ambidextrous. According to Gibson and Birkinshaw [9] and Mom et al. [10], organisational ambidexterity (OA) refers to an organisation’s ability to perform equally well in two distinct functions. OA originates from individuals. Therefore, organisations can view the manifestation of ambidexterity through the actions of individuals throughout an organisation. Furthermore, employees’ ambidexterity skills contribute to cumulative organisational ambidexterity [1]. Organisations are urged to consider employees as human capital that needs to be developed into valuable and rare resources necessary for competitive advantage and better performance [11].

Ambidextrous behaviours may create adverse performance outcomes due to the associated stress and cognitive strain on employees ([12,13]). In addition, Gabler et al. [14] reported that ambidextrous employees experience ambiguity about their organisational role. Another interesting point, Pertusa-Ortega et al. [12] argued that ambidextrous employees might not be mandated in all settings and proposed ambidextrous teams of individuals either with exploitative or explorative capabilities. However, prevailing research suggests a positive relationship between employee ambidexterity and performance [15]. Organisations’ proactiveness in ambidexterity allows them to be innovative, resulting in better performance [16]. Rosing and Zacher [4] believe a thorough understanding of EA functions is vital for accomplishing OA.

Considering the significance and growing recognition of EA within business research, it is essential to keep track of the development of the body of knowledge on this topic. With the increased autonomous work that comes along with remote and online work requirements, the importance of understanding employees’ ambidextrous behaviours and its impacts is higher than ever. Recent literature reviews on the topic of EA by Mu et al. [17] and Pertusa-Ortega et al. [12] discuss the characteristics, antecedents and consequences of individual ambidexterity. However, the pertinent factors that influence EA and drive favourable performance outcomes were not the focus of their studies. There has yet to be a review exclusively focusing on mapping the drivers and constraints of EA and its various performance impacts at both individual and organisational levels. This study addresses this gap and delves into the factors that drive or constrain EA. The field is fragmented, with studies from various disciplines covering distinct aspects. Mu et al. [17] pointed out that the degree of employee ambidexterity differs within and across contexts. Therefore, collective evidence on the factors that impact EA for positive performance outcomes will expand the literature on the topic and provide directions for future research. This information will also assist decision-makers in strategising plans to ameliorate employees’ ambidextrous skills and gain considerable benefits [7].

The paper aims to achieve three primary objectives: firstly, to present an up-to-date review of existing research, thus contributing to the development of the body of knowledge on the EA drivers, constraints and performance impacts; secondly, to identify research gaps based on the findings from previous literature; and thirdly, to elucidate potential future research avenues for scholars in the field.

Peters et al. [18] recommend using the Population, Concept, and Context (PCC) framework to develop the research question for a scoping review. The ‘Population’ element requires the researcher to specify the participant group under investigation in the scoping review. Organisational employees are the population for the present study. The ‘Concept’ element indicates the key topic under investigation. Employee ambidexterity drivers, constraints and performance impacts are the topics of this scoping review. Finally, ‘Context’ provides the studies’ setting in the review. The context is open in the case of the present study. We are attempting to analyse all the studies that have explored and reported the performance impacts of employee ambidexterity. Accordingly, we framed the following research questions.

1. What are the drivers and constraints of employee ambidexterity in achieving positive performance outcomes?
2. What do we know about the performance impacts of employee ambidexterity at the individual and organisational levels?

2. Methodology

Literature reviews are fundamental in advancing knowledge in scholarly research [19]. Scoping reviews are recommended when conducting exploratory studies that aim to map literature to identify key characteristics related to a concept ([18,20]). For our research, our main aim is to identify the drivers and constraints of EA from existing literature since no previous studies have explored this topic. As such, we have chosen to use a scoping review. The review adheres to the guidelines outlined in the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews) by Peters et al. [18]. In addition, the checklist provided by Tricco et al. [20] was followed.

Scoping reviews help explore broader questions and identify key factors related to a concept [20]. It is important to note that, unlike systematic literature reviews, the purpose of a scoping review is not to synthesise the results of included sources. Moreover, they are not intended to be comprehensive or replicable like systematic reviews. Instead, their purpose is to provide a rapid understanding of the scope, critical factors, and maturity of a particular field, typically to inform research or policy.

3. Data sources and search strategy

We have identified the required search terms after conducting a thorough literature review. The search strings employed were.

- "Individual ambidext*" OR "Individual* exploitat* and explorat*" AND "impacts" OR "consequences*" OR "outcomes" OR "effects" OR "performance" OR "Drivers".
- "Employee ambidext*" OR "Employee* exploitat* and explorat*" AND "impacts" OR "consequences*" OR "outcomes" OR "effects" OR "performance" OR "Drivers".
- "Human ambidext*" OR "human exploitat* and explorat*" AND "impacts" OR "consequences*" OR "outcomes" OR "effects" OR "performance" OR "Drivers".

A comprehensive search on databases such as Scopus, Web of Science, and EBSCOhost (Academic Search Complete, Business Source Complete) databases was conducted without any time restrictions. This was necessary as limited publications were available on the subject matter [21]. The researchers consulted university librarians for guidance on creating search strings, which were used to form the current search strings. The decision to use multiple search strings was based on Martarelli et al. [22]. A total of 75 articles were found and added to Mendeley,¹ which allowed us to identify and eliminate twenty duplicate articles.

4. Screening process

In accordance with the team's agreement, one of the authors carefully examined the abstract and conclusion sections of the 55 selected research papers to determine if they specifically investigated the performance impacts of Employee Ambidexterity (EA). This analysis was recorded in a spreadsheet, accompanied by comments, which two other authors then reviewed to ensure precision and reliability. Twelve papers were excluded at this stage as they did not focus on investigating or discussing EA performance impacts.

To ensure a collective understanding of the inclusion and exclusion criteria, team members scheduled a meeting and clarified any ambiguities. Following that, each team member individually conducted a thorough screening of the full text for all 43 papers. They documented their comments in a separate Excel sheet against the inclusion and exclusion criteria as well as the study objectives for each paper. Through several constructive discussions, the team collectively identified and selected 11 papers for inclusion in the review at this stage. This rigorous process of cross-checking and multiple reviews serves to enhance the validity of the review process.

Lastly, to ensure a comprehensive review, a snowballing method [23] was employed, focusing on the backward search of references within the selected studies. This approach aimed to identify additional papers that may have been omitted from the search engine results due to the absence of chosen keywords or search strings [24]. We successfully identified twelve articles to include in the review through this snowballing method. Although we made every effort to locate all relevant papers that met the selection criteria, there is a possibility that some may have inadvertently been overlooked. To ensure thoroughness, we applied the same rigorous screening process to the papers obtained through this method to ensure consistency.

Discrepancies regarding article eligibility and selection were effectively resolved through consensus and thorough discussions among all team members. Regular meetings were held throughout the selection and screening process, and documents were cross-checked to maintain consistency and precision. As a result, the final sample comprised 23 pertinent studies that met the inclusion criteria. The PRISMA flow diagram of the study screening and selection process is shown in Fig. 1.

5. Inclusion and exclusion criteria

The following inclusion criteria have been adopted during the screening process: (1) the paper examines the EA performance outcomes, effects, impacts or consequences; (2) the paper investigates the EA impacts at individual or organisation or any other levels (e.g. team, department); (3) it is a journal article or conference paper; (4) were published in English.

The research aimed to identify rigorous empirical studies of the performance effects of EA. Therefore, review papers, reports, editorials, letters to the editor, book reviews, short communications, graduate dissertations, conference proceedings, protocol papers, news and commentaries were excluded. In addition, articles that do not discuss EA's performance impact have also been eliminated.

6. Data charting process

In order to conduct a detailed analysis of the papers, the research team convened and engaged in an extensive discussion. During this process, a data extraction strategy and coding table were developed in Microsoft Excel, aligning with the study's objectives. Two authors independently extracted relevant data from the eligible articles using the designated data extraction table, which the other authors subsequently reviewed. The analysis encompassed the extraction of important characteristics such as publication year, publication type, methodology, study location, study context, study type, study focus, unit of impact, and findings. The table underwent multiple revisions and refinements through rigorous reviews and discussions among the authors. The data extraction table can be found as a supplementary document to this paper named 'Supplementary Table 1 -Characteristics of Included Studies'.

¹ Mendeley is a popular referencing software. The selected articles can be found at: <https://www.mendeley.com/reference-manager/library/collections/0f23ea58-8e1d-4c33-99e5-c56cd46ce7f4/all-references/>.

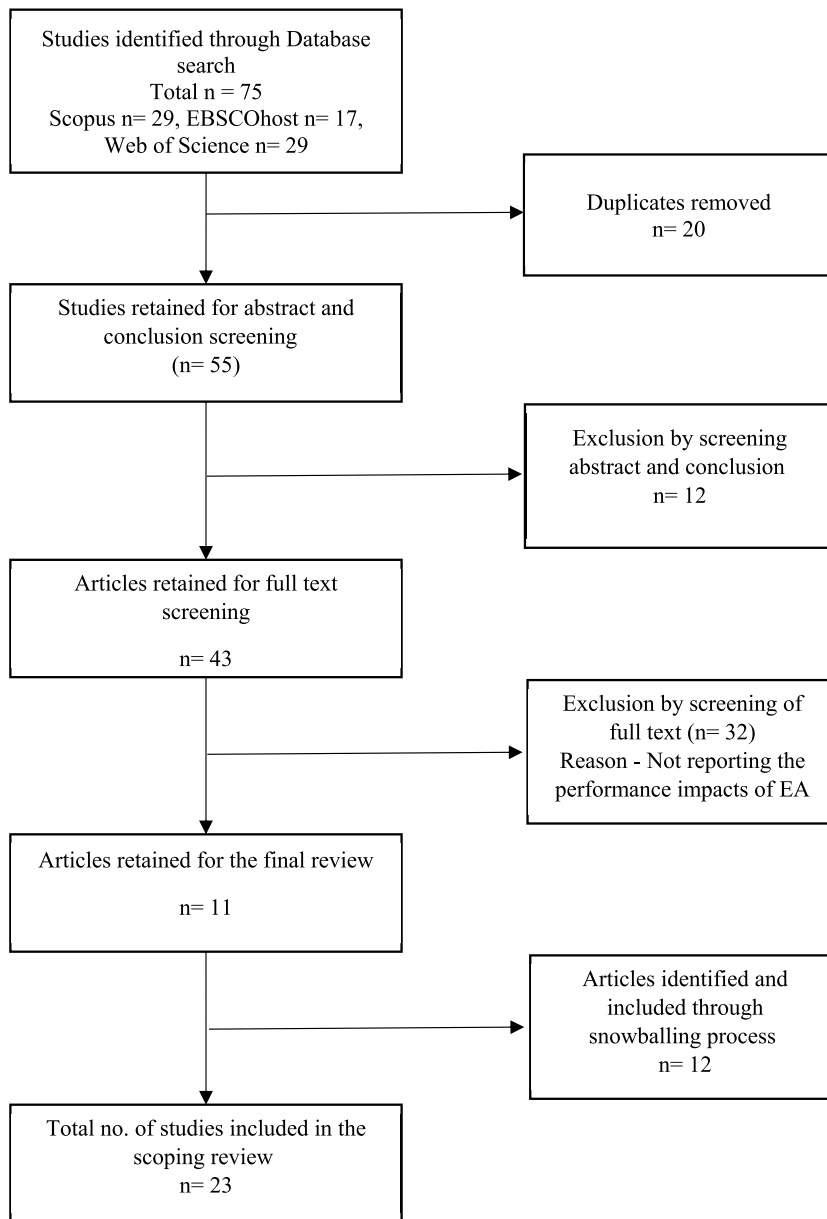


Fig. 1. PRISMA flow diagram of the selection and screening process.

The papers underwent a thematic analysis utilising an iterative categorisation (IC) technique, as proposed by Neale [25], to identify the drivers and constraints of Employee Ambidexterity (EA). A separate Excel worksheet was employed for this analysis to facilitate efficient teamwork. We commenced with documenting a description of each factor that was reported to influence EA as a broader code. These factors were then categorised into two distinct groups: those with a 'positive impact' and those with a 'negative impact'. Through several iterations, team members grouped themes that exhibited similarities. These themes were highlighted and colour-coded to enhance clarity and ease the coding process.

This iterative coding process was conducted after careful deliberations and multiple rounds of independent analysis undertaken by each group member. The primary aim was to guarantee our findings' rigor and validity. By working together on these tasks, each team member contributed their expertise, fostering a collective effort towards a comprehensive evaluation of the research process. Through this systematic and extensive analysis of the reviewed papers, we identified a complete set of 33 factors that significantly impact employee ambidexterity in achieving enhanced performance outcomes. Following this phase, our team convened another meeting to discuss the themes and categories. This crucial stage focused on aligning our themes with existing literature. Based on our analysis, we successfully categorised the drivers of employee ambidexterity into five distinct categories. In contrast, the reported constraints were limited to just four factors, thereby eliminating the need for categorisation. A comprehensive summary of the thematic findings from

Table 1
Thematic Analysis using Iterative Categorisation.

Extracted codes from the reviewed papers	Grouped and reordered analyses			Categorisation
	Positive Impact	Drivers	Refined headings	
The relationship between ambidexterity and employee's service performance was stronger for employees with higher Perceived organisational support (POS) than for those with lower POS.	The relationship between ambidexterity and employee's service performance was stronger for employees with higher Perceived organisational support (POS) than for those with lower POS.	Perceived Organisational support	Organisational support	Organisational factors
Observed a negative relationship between the supervisory ratio and individual performance at the organisational level.	The findings indicate that the effect of management support on employees' behavioural ambidexterity is positive and significant.	Management support		
An organisational architecture reflecting greater levels of spatial separation and integration mechanisms fosters the application of individual ambidexterity.	An organisational architecture reflecting greater levels of spatial separation and integration mechanisms fosters the application of individual ambidexterity.	Organisational architecture	Organisational architecture	
An organisational context with greater levels of stretch, discipline, support and trust fosters the application of individual ambidexterity.	An organisational context with greater levels of stretch, discipline, support and trust fosters the application of individual ambidexterity.	Organisational context	Organisational context	
Salespeople with high organisational identification have a natural tendency to engage proactively in both new and existing product-selling activities.	Our findings indicate that when staffing positions, units, or teams that require ambidextrous behaviors, firms should select those managers with long organisational tenure.	Organisational tenure	Organisational tenure	
Multitasking individuals benefit the most from access to internal resources, whereas external resources are more efficiently allocated to explorative-only employees.	Multitasking individuals benefit the most from access to internal resources, whereas external resources are more efficiently allocated to explorative-only employees.	Internal resources - funding, facilities, and support	Internal resources	
Study reveals that strong team identification impairs the effective interplay of CSRs' locomotion and assessment orientations, making ambidextrous behaviour less likely.	Leader opening and closing behaviors at a high level can generate employee exploration and exploitation behaviours at a high level.	Opening & closing leadership styles	Leadership effects	
Manager's ambidextrous selling orientation has a positive effect on salespeople's proactive selling of (a) new and (b) existing products	Manager's ambidextrous selling orientation has a positive effect on salespeople's proactive selling of (a) new and (b) existing products	Manager's ambidextrous orientation		
The findings show that intrinsic motivation is an important predictor of individual ambidexterity	HR systems are positively and significantly related to employees' behavioural ambidexterity.	HR systems	HRM practices	
Employees with high levels of extrinsic reward appear to be capable of stronger individual ambidexterity	Employees with high levels of extrinsic reward appear to be capable of stronger individual ambidexterity	Extrinsic reward		
A degree of connectivity is necessary for ambidexterity	A degree of connectivity is necessary for ambidexterity	Connectivity	Connectivity	Social Connectedness related factors
The strength of social network is positively related to the level of managerial engagement in ambidexterity activities by managers	The strength of social network is positively related to the level of managerial engagement in ambidexterity activities by managers	Social network	Social network	
Employees' individual ambidexterity demonstrated a positive link with customer value co-creation through the mediation mechanisms of customer-employee identification and customer-organisation identification	Employees' individual ambidexterity demonstrated a positive link with customer value co-creation through the mediation mechanisms of customer-employee identification and customer-organisation identification	Customer-employee Identification Customer-organisation Identification	Identification	Employee behaviour related factors
The findings indicate that the effect of management support on employees' behavioural ambidexterity is positive and significant	Salespeople with high organisational identification have a natural tendency to engage proactively in both new and existing product-selling activities.	Organisational Identification		
Ambidextrous leadership interact with public service Motivation in further promoting individual ambidexterity	Ambidextrous leadership interact with public service Motivation in further promoting individual ambidexterity	Public service Motivation	Types of motivation	
HR systems are positively and significantly related to employees' behavioural ambidexterity.	The findings show that intrinsic motivation is an important predictor of individual ambidexterity	Intrinsic Motivation		

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Table 1 (continued)

Extracted codes from the reviewed papers	Grouped and reordered analyses			Categorisation
	Positive Impact	Drivers	Refined headings	
The relationship between managerial ambidexterity and firm performance is mediated by knowledge brokerage activities. Researcher’s ambidextrous orientation is related to openness to experience.	CSRS who are locomotion and assessment oriented engage in more ambidextrous behaviors, they seem the best-suited candidates for a service–sales job.	Locomotion Motivational orientation Assessment Motivational orientation	Motivational orientation	
This result suggests that the individual ambidexterity of frontline service employees with high levels of emotional intelligence grows faster as Intrinsic motivation increases	The relationship between managerial ambidexterity and firm performance is mediated by knowledge brokerage activities.	Knowledge brokerage activities	Knowledge brokerage activities	
Only when the exercise of bounded discretion is low does the assessment orientation purposefully guide high-locomotion-oriented CSRs’ task engagement in the direction of their service and sales goals, leading to ambidextrous behaviour.	Researcher’s ambidextrous orientation is related to openness to experience.	Openness to experience	Openness to experience	Employee personality related factors
Employee perceptions of proactive personality can help enhance IA when a person’s intrinsic motivation is low	This result suggests that the individual ambidexterity of frontline service employees with high levels of emotional intelligence grows faster as Intrinsic motivation increases	Emotional intelligence	Emotional intelligence	
The level of perceived environmental dynamism is positively related to the level of engagement in ambidexterity activities by managers	Our results suggest that career- adaptable employees appear to engage in ambidextrous behaviour in their service delivery.	Career adaptability: control & confidence	Career adaptability	
Exploration task to risk-averse individuals yielded higher performance when the relative cost was higher than 1.5. Found that functional tenure is directly negatively related to manager’ ambidexterity.	Employee perceptions of proactive personality can help enhance IA when a person’s intrinsic motivation is low Exploration task should be assigned to risk-loving individuals when the relative cost is below 1:1.6.	Proactive personality Risk loving	Proactive personality Attitude towards risk	
Researcher’s ambidextrous orientation is related to openness to experience. Exploration task should be assigned to risk-loving individuals when the relative cost is below 1:1.6.	Exploration task to risk-averse individuals yielded higher performance when the relative cost was higher than 1.5. We observe a positive relationship between the CSI score and CEOs’ innovation behaviour.	Risk averse Cognitive style index score	Cognitive styles	
Our findings indicate that when staffing positions, units, or teams that require ambidextrous behaviors, firms should select those managers with long organisational tenure.	Our findings indicate that in demanding work contexts in terms of high uncertainty and interdependence, a manager may increase his or her performance by behaving ambidextrously.	Uncertain	Uncertain	Work environment related factors
Our results suggest that career- adaptable employees appear to engage in ambidextrous behaviour in their service delivery.		Interdependent	Interdependent	
Leader opening and closing behaviors at a high level can generate employee exploration and exploitation behaviors at a high level.	The level of perceived environmental dynamism is positively related to the level of engagement in ambidexterity activities by managers	Dynamic	Dynamic	
We observe a positive relationship between the CSI score and CEOs’ innovation behaviour.	Negative Impact	Constraints		
CSRS who are locomotion and assessment oriented engage in more ambidextrous behaviors, they seem the best-suited candidates for a service–sales job.	Observed a negative relationship between the supervisory ratio and individual performance at the organisational level. Found that functional tenure is directly negatively related to manager’ ambidexterity.	Supervisory ratio Functional tenure		
Our findings indicate that in demanding work contexts in terms of high uncertainty and interdependence, a manager may increase	Study reveals that strong team identification impairs the effective interplay of CSRs’ locomotion and	Team identification		

(continued on next page)

Table 1 (continued)

Extracted codes from the reviewed papers	Grouped and reordered analyses			Categorisation
	Positive Impact	Drivers	Refined headings	
his or her performance by behaving ambidextrously.	assessment orientations, making ambidextrous behaviour less likely. Only when the exercise of bounded discretion is low does the assessment orientation purposefully guide high-locomotion- oriented CSRs' task engagement in the direction of their service and sales goals, leading to ambidextrous behaviour.			Bounded discretion

our analysis is presented in [Table 1](#) below. The literature references for each identified driver and constraint are presented in [Table 2](#), located in the Appendix.

7. Study characteristics

Nineteen studies utilised a survey research methodology in their research. [Table 3](#) provides a snapshot of the methods used by the studies included in this review.

Research into the effects of EA performance began in 2011 (e.g. Vidgen et al. [26]). Before that, studies focused on the concept or antecedents of ambidexterity. As depicted in [Fig. 2](#), there have been a few publications on the performance impacts of EA each year since then. Among the 23 reviewed papers, fifteen studies confirmed that EA positively impacts individual performance, while eight found that it benefits organisations. There are twenty-two cross-sectional studies and one longitudinal study.

The literature review identifies various industries as the context for EA performance impact research, with universities being the most popular, followed by the IT industry (See [Fig. 3](#)). Some studies also focused on multiple sectors. This indicates that EA is crucial for companies across various industries, and its popularity is increasing.

8. Performance impacts of EA

This scoping review unequivocally validates the notion that employee ambidexterity significantly influences both individual and organisational performance. Our analysis, explicitly utilising the extracted data item "unit of impact", where we collected information regarding whether the paper reported the impact of EA on individual or organisational performance, supports this finding. We discovered that eight studies specifically examined and demonstrated the organisational performance impacts of EA, while an additional fifteen studies discussed the effects of EA on individual performance outcomes. The studies included in this scoping review investigated the association between EA and a diverse array of performance measures. Notably, areas such as service performance, sales performance, research performance, and customer value co-creation were examined, among others. [Table 4](#) in the Appendix section categorizes studies based on their analysis of impact units at the individual or organisational level. Through this scoping review, we confidently affirm that employee ambidexterity does indeed exert a substantial impact on both individual and organisational performances. The subsequent section provides detailed discussions of these findings.

8.1. Impact of EA on individual performance

Fifteen studies confirmed the impact of EA on individual performance in various forms. Among them, six studies examined and demonstrated a positive relationship between employee ambidextrous behaviours and individual performance in general (See – [4, 27–31]). Jasmand et al. [32] and van der Borgh et al. [33] found that customer service representatives/salespersons' ambidextrous behaviours boosted their sales performance. Similarly, Kao and Chen [34] demonstrated how frontline employees' ambidextrous behaviours enhance their service performance. In addition, a few studies investigated the relationship between managers' ambidexterity and managers' performance. For example, Mom et al. [35], Torres et al. [36] and Vidgen et al. [37] illustrated that managers' ambidexterity enhances their performance. Schultz et al. [38] and Kobarg et al. [2] reported improved researchers' performance due to their ambidextrous capabilities. However, according to Mao and Washida [39], the association between researchers' ambidexterity and performance is insignificant.

Table 3
Methodologies utilised by the studies.

Methodology	Count
Mixed methods	1
Multi-agent simulation	1
Quantitative diary studies	1
Survey	19
Simulator experimental approach	1

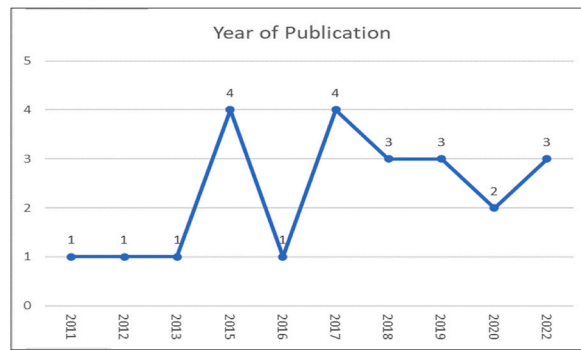


Fig. 2. No. of papers published per year.

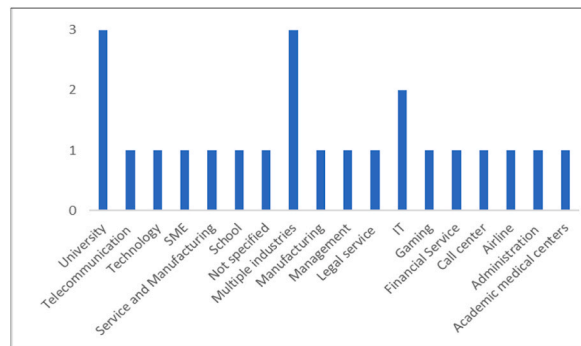


Fig. 3. Study context.

8.2. Impact of EA on organisational performance

In contrast to certain previous studies that indicated a lack of exploration regarding the relationships between EA and firm performance [12], our findings revealed a distinct perspective. We discovered that eight studies specifically examined the organisational benefits of EA and highlighted its significant role in enhancing organisational performance in many ways. Hashim et al. [40] found that entrepreneurs’ ambidextrous skills lead to improved firm performance. According to Schnellbacher et al. [21], EA enhances performance across different levels of the organisation. Prieto-Pastor and Martin-Perez [41] found that EA is fundamental for achieving OA. Furthermore, Lawrence et al. [42] noticed top management team leaders’ ambidexterity driving innovation and operational success at the organisational level. Similarly, Yap et al. [43] reported improved organisational performance as a result of management’s ambidexterity. Pietsch et al. [44] observed that school leaders’ exploitation and exploration activities contributed to better innovative performance. Finally, Luu et al. [45] found that public employees’ ambidexterity supports customer value co-creation.

9. Drivers and constraints of EA

The scoping literature review identified factors that drive or constrain the positive relationship between EA and performance. The following sections, ‘Drivers’ and ‘Constraints,’ delve further into these factors.

9.1. Drivers

Our findings show that certain factors play a crucial role in enhancing the performance outcomes of Employee Ambidexterity (EA). These factors, referred to as "drivers" of EA, can be categorised into five distinct groups: Organisational factors, Social Connectedness-related factors, Employee Behaviour-related factors, Employee Personality-related factors, and Work Environment-related factors. Here is a concise overview of each category, along with its relevant components, providing valuable insights into the key factors that contribute to the effectiveness of EA.

9.1.1. Organisational factors

This category has classified factors such as organisational support, architecture, context, tenure, internal resources, leadership effects, and human resource management (HRM) practices.

9.1.1.1. Organisational support and context. The perceived support from the organisation plays a crucial role in enabling employees' ambidextrous behaviours. A supportive work environment provides employees with psychological safety, which motivates ambidextrous behaviour [46]. Both Affum-Osei et al. [27] and Schultz et al. [38] illustrated that perceived organisational support acts as a catalyst to increase employee ambidextrous behaviours leading to better performance outcomes.

In addition, Prieto-Pastor and Martin-Perez [41] reported that support from management positively influences employees' ambidextrous behaviours. The authors argued that flexible and supportive management cultivates trust in employees to embark on risky tasks confidently, thus fostering ambidextrous behaviours.

Previous studies also have highlighted the importance of offering high levels of stretch, discipline, support and trust to enhance employee ambidexterity. For example, Schnellbacher et al. [21] described stretch as the motivation of employees to engage in innovative activities proactively; discipline as a willingness to stay within the expectation of others; support means the attitude to help each other, which allows employees to acquire resources as needed; and finally, trust among the members of the organisation helps the uninterrupted flow of knowledge. The authors demonstrated that these factors significantly impact employees' exploitation and exploration activities. Therefore, organisations striving to heighten employee ambidextrous capabilities should ensure a work environment that offers functional (stretch, discipline) and social (support, trust) factors [21].

9.1.1.2. Organisational architecture. The organisational architecture features, such as spatial separation and integration mechanisms, are also reported to be capable of fostering employee ambidexterity. According to Schnellbacher et al. [21], the interconnection between separated exploration and exploitation organisational units causes employees to engage in both activities leading to ambidextrous behaviours. Integration mechanisms implement standard procedures and practices for interacting with different organisational units to nurture employees' ambidextrous behaviours. In addition, these integration mechanisms provides the necessary knowledge flows and resources to engage in ambidextrous activities [21].

9.1.1.3. Organisational tenure. Employees' ambidextrous skills improve with the extension of organisational tenure [35]. Organisational tenure refers to the time spent in an organisation-years or months [47]. Therefore, Mom et al. [35] recommended selecting employees with higher organisational tenure for projects that require ambidextrous capabilities. Longer organisational tenure provides managers with high problem-solving and conflict-management skills, open-mindedness to risk and extensive knowledge of available resources [48]. Managers with longer organisational tenure also exercise increased autonomy bolstering multitasking and innovation [49].

9.1.1.4. HR practices and internal resources. HR practices play a significant role in enhancing employee ambidextrous behaviours. For example, high-involvement HR systems follow "commitment and involvement" based practices that enhance employees' participation in decision-making and motivate them to bring forth their full potential, influencing them to behave ambidextrously ([39, p.590].

Furthermore, employees with high perceived extrinsic rewards from their organisation display increased ambidextrous behaviours [34]. Extrinsic rewards refer to HR practices of rewarding employees for accomplishing work goals [50]. Extrinsic rewards could be in the form of monetary, verbal reinforcements or positive feedback [51]. It also boosts extrinsic motivation. The relationship between ER and employee ambidexterity is strong when employees' intrinsic motivation is weak [34]. Nonetheless, it is interesting to note that extrinsic rewards in the form of social or verbal reinforcement are more effective. Deci [51] demonstrated that monetary rewards negatively impact intrinsic motivation and diminish performance outcomes. However, on the contrary, Gagné and Deci [52] argued that employees are working to make money; hence organisational, motivational strategies centered on monetary rewards could be more enticing to them.

Schultz et al. [38] reported that internal resources such as funding, facilities, and support enrich employees' performance. Furthermore, access to these resources positively impacts employee ambidextrous behaviours, leading to improved performance.

9.1.1.5. Leadership effects. The organisational leadership style also impacts employees' ambidextrous behaviours [53]. According to the ambidextrous leadership theory of Rosing et al. [54], leaders with opening and closing behaviours motivate employees' ambidextrous behaviours. Rosing et al. [54] described leaders opening behaviours as encouraging employees to engage in innovative tasks. On the contrary, leaders' closing behaviour causes employees to follow strict routines. Leaders' opening behaviour promotes employees' exploration while closing behaviour drives exploitative behaviours. Leaders should also be able to shift between these two styles per the work demands. Hence it is suggested that high levels of opening and closing behaviours are necessary for generating high levels of employee exploitative and explorative behaviours. Similarly, Luu et al. [45] reported that leaders' ambidextrous behaviours galvanise employees to think and behave ambidextrously.

9.1.1.6. Manager's ambidextrous orientation. The ambidextrous orientation of managers is reported to influence employees' new and existing product-selling efforts [55]. Manager ambidextrous orientation refers to the ability of a manager to maintain an optimum balance between the initiatives of selling new and existing products [56]. Employees' proactive selling behaviours fluctuate depending on managers selling orientation to align with managers' preferences. Hence, van der Borgh et al. [55] recommended explicit expression of managers' support for ambidextrous selling behaviours to motivate employee ambidexterity.

9.1.2. Social connectedness-related factors

This category consists of two factors: connectivity and social networks.

9.1.2.1. Connectivity and social network. Employees' connectivity and social networking can enhance ambidextrous behaviours [43, 57]). This social connectedness imparts the knowledge to engage in exploitation and exploration activities. Moreover, it has been found that connectivity and networking help employees balance exploration and exploitation activities [58]. Connectivity can be internal or external. External connectedness enriches exploration behaviours, whereas internal connectedness deflects it [57]. Similarly, Yap et al. [43] reported that managers with strong external social networks indulge in exploration activities. Interestingly, Vidgen et al. [57] found no association between external or internal connectedness and exploitation. However, according to Yap et al. [43], there is a positive association between internal social networks and exploitation activities. The encounter with people of distinct beliefs and experiences galvanises employees to behave ambidextrously. Hence, Yap et al. [43] recommended establishing strong internal and external social connections to enhance managers' ambidexterity.

9.1.3. Employee behaviour related factors

Certain behaviours of employees are associated with ambidexterity. The scoping review identified five behavioural factors positively associated with employees' ambidextrous capabilities. These factors are customer-employee & Customer-organisation Identification, organisational identification, intrinsic motivation, public service motivation, locomotion and assessment motivational orientation. These factors are delineated in the following section.

9.1.4. Identification

Behaviours such as customer-employee identification and customer-organisation identification are illustrated to impact employee ambidexterity to produce better performance outcomes [45]. According to the authors, the connectedness between frontline employees and customers is called customer-employee identification. Customer-organisation identification develops from the customer's special attachment towards the organisation [59]. Interestingly, previous studies have suggested that customer-organisation identification derives from customer-employee identification [60]. Luu et al. [45] found that these factors positively mediate the relationship between employees' ambidexterity and customer value co-creation. Customer value co-creation happens when customers proactively contribute to organisations' value-creation activities [61].

9.1.4.1. Organisational identification. Employees' ambidextrous behaviours are associated with their organisational identification (OI). van der Borgh et al. [55] found that salespeople with strong organisational identification perform better in ambidextrous selling. They proactively engage in selling new and existing products. These employees are committed to organisational goals, values and norms and continuously strive to achieve short-term and long-term organisational goals [62]. Structural mechanisms such as OI create a natural tendency in sales employees to proactively sell new and existing products [55].

9.1.4.2. Types of Motivation. Intrinsic motivation (IM) is a critical factor in triggering individual ambidexterity. Intrinsic motivation means finding a genuine interest and enjoyment in doing something. Kao and Chen [34] found IM as a significant predictor of EA, which can enhance frontline service employees' service performance. Hence the authors recommended learning about employees' intrinsic motivational factors such as "safety, esteem or camaraderie" to improve organisational ambidextrous performance ([34], p. 1856).

Employees with high public service motivation (PSM) tend to exploit the full potential of their existing competencies and explore new competencies to deliver the best customer service possible [45]. PSM refers to a person's philanthropic motivation to selflessly serve a community or humanity [63]. In the public services industry, PSM positively moderates the relationship between ambidextrous leadership and frontline public employees' ambidexterity [45].

9.1.4.3. Motivational orientation. Motivational orientations can persuade employees to engage in ambidextrous behaviours. Jasmand et al. [32] suggested two types of motivational orientation, locomotion and assessment. Locomotion orientation refers to an individual's innate desire to be on the move and actively engage in activities [64]. Assessment orientation creates a desire in individuals to critically assess actions to ensure value and accuracy [32]. The authors posited that there is a positive relationship between locomotion orientation and ambidextrous behaviours of employees. They also found that this relationship becomes more robust when the employees are highly assessment oriented. It can be noted that the locomotion and assessment orientations together galvanise employees to pursue service and sales goals [32]. Therefore, personnel with locomotion and assessment orientations are the best fit for the service-sales job as they tend to engage more in ambidextrous behaviours. According to Jasmand et al. [32], such a person-job fit produces additional benefits such as job and customer satisfaction.

9.1.4.4. Knowledge brokerage activities. Knowledge brokerage accumulates knowledge from various internal and external sources to produce better performance outcomes [65]. Ambidextrous behaviours of managers are strengthened by their knowledge brokerage activities [43]. Continuous acquisition of new knowledge gives managers the skills and insights to ameliorate their business performance. Furthermore, the ambidextrous capabilities of managers will lead to greater organisational performance when combined with competitive information. Yap et al. [43] confirmed the mediating effect of knowledge brokerage between managers' ambidexterity and organisational performance.

9.1.5. Employee personality-related factors

Personality traits of employees were also found to influence their ambidextrous behaviours. This section discusses employees'

personality traits such as attitude towards risk, career adaptability resources, cognitive styles, emotional intelligence, proactive personality and openness to experience that are reported to be positively associated with ambidexterity.

9.1.5.1. Openness to experience. Employees who are open to experience tend to engage in more ambidextrous behaviours. Mao and Washida [39] demonstrated that one of the big five model personality factors, openness to experience [66], is positively associated with employees' ambidextrous orientation. In addition, the authors also stated that openness to experience leads employees towards innovative behaviours.

9.1.5.2. Emotional intelligence. High emotional intelligence (EI) enhances employees' ambidextrous capabilities. Kao and Chen's [34] work explored the impact of emotional intelligence on ambidexterity. In this study, EI is considered an individual's ability to recognise "own and others' internal states, motives and behaviours" ([34], p.1849). They reported that employees with higher levels of EI benefit from stronger ambidextrous capabilities provided they also have high intrinsic motivation.

9.1.5.3. Career adaptability. Career adaptability resources such as career concern, career control, career curiosity, and career confidence [67] can impact employees' ambidextrous behaviours. Affum-Osei et al. [27] studied the relationship between these social cognitive factors and ambidexterity and found that career-adaptable employees demonstrate ambidextrous behaviours. In addition, the authors reported that strong control and confidence bolster employees' ambidextrous behaviours. However, they found no association between the other resources - concern and curiosity- and ambidextrous behaviours.

9.1.5.4. Proactive personality. Employees' proactive personality (PP) helps them to boost their ambidexterity skills [34]. PP is a trait that encourages individuals to take the initiatives to shift from the status quo and seek opportunities for further growth [68]. Interestingly, Kao and Chen [34] observed that this relationship between PP and ambidexterity is stronger when the employees' intrinsic motivation is at its low. Therefore, proactive employees with high EI were suggested to be the best fit for the tasks where ambidextrous skills are imperative.

9.1.5.5. Attitude towards risk. Employees' attitude towards risk is found to influence their ambidextrous behaviours. Hong et al. [69] categorised individuals' attitudes towards risk into three groups: risk-averse, risk-neutral, and risk-loving. Risk-averse individuals tend to choose tasks with low levels of risk compromising potentially high outcomes, whereas risk-loving individuals prefer high potentials and are willing to take high risks. According to Hong et al. [69], risk-loving individuals perform better with explorative tasks when the expected costs are comparatively low. On the contrary, risk-averse individuals deliver better performance results when costs are high. The authors argued that risk-loving individuals are more concerned about the high expenses which can impact their ambidextrous behaviours.

9.1.5.6. Cognitive styles. An exciting finding by de Visser and Faems [70] is that individuals' cognitive styles – analytic and intuitive - shape their exploitative and explorative behaviours. They noted a direct correlation between an employee's innovation behaviours and their cognitive style index score. According to the authors, the analytic cognitive style encourages exploitative behaviours, while the intuitive cognitive style motivates explorative behaviours. Allinson and Hayes [71] stated that individuals with analytical cognitive styles display strong reasoning, attention to detail and a structured decision-making approach. The intuitive cognitive style manifests as decisions based on instant gut feelings maintaining a broader perspective.

9.1.6. Work environment-related factors

This section discusses the work environment-related factors that positively impact employees' ambidextrous behaviours. In work environments that are uncertain and highly dynamic, employees showcase their ambidextrous capabilities to adapt effectively to the fluctuating demands of the market [43]. Furthermore, such environments require employees to exploit internal efficiencies while exploring opportunities. Yap et al. [43] found that perceived environmental dynamism is strongly and positively associated with employees' ambidexterity. Congruent with these arguments, Mom et al. [35] and Pietsch et al. [44] posited that highly uncertain work contexts enhance employees' ambidextrous behaviours. Moreover, organisations benefit from ambidextrous behaviours in dynamic work environments rather than in constant and specific work contexts [35].

In addition, work context interdependence also fosters employee ambidextrous behaviours. Higher interdependence causes employees to act more ambidextrously and achieve success ([1,35]). In other words, ambidextrous behaviours are necessary to achieve better performance outcomes in work contexts with high uncertainty and interdependence.

9.2. Constraints

Some factors diminish employee ambidextrous capabilities. They are functional tenure, team identification, bounded discretion and conscientiousness—a discussion of the relationship between these factors and EA is given below.

9.2.1. Functional tenure

Functional tenure negatively impacts employees' ambidextrous behaviours [35]. Functional tenure means the amount of time spent in a particular function. Employees develop a more profound identification with their profession and the related functional area

as their functional tenure increases. Therefore, researchers argue that higher functional tenure weakens employees' identification with the organisation [72]. As noted in section 2.2, organisational identification is crucial in fostering employee ambidextrous capabilities.

Employees were also found to develop profound functional beliefs along with prolonged functional tenure [73], which can lessen flexibility, curiosity and open-mindedness. These functional beliefs are related to the myopic application of rationality to accomplish a particular work goal [48] effectively. Hence, Mom et al. [35] recommended choosing employees with long organisational tenure and less functional tenure if the organisation is seeking employees with ambidexterity skills.

9.2.2. Team identification

Team identification is an employee's perception of belongingness to the team [74]. Team identification deflects the positive effects of locomotion and assessment orientations, reducing the possibilities of ambidextrous behaviours [32]. Section 2.5 discussed the role of motivational orientations - locomotion and assessment - in fostering employee ambidexterity. Strong team identification diminishes "active deliberation and critical questioning" ([32], p. 32), hindering ambidexterity.

9.2.3. Bounded discretion

Employees exercising bounded discretion tend to follow strict routines and recommended approaches to complete their work tasks ensuring reduced cognitive effort [75]. They choose an action specified in organisational training manuals, routine procedures, rules and standards in goal pursuit. Jasmand et al. [32] stated that bounded discretionary behaviour impairs employee ambidexterity. Exercising a daily routine in performing work tasks with little analytical or rational thinking impedes assessment-oriented behaviours. Earlier, we discussed the significance of employees' assessment orientation in strengthening ambidextrous behaviours (Refer to section 2.5).

9.2.4. Conscientiousness

Conscientiousness is negatively associated with researchers' exploitative and ambidextrous orientation [39]. However, there is no association between conscientiousness and explorative behaviours. According to Rothman and Coetzer [66], the personality factor conscientiousness indicates self-control and the ability to plan, organise and perform tasks actively.

Mao and Washida [39] argue that individuals with exploitative orientation have low-conscientiousness and struggle to focus on one thing, which limits their ability to accomplish their goals. The level of conscientiousness plays a vital role in regulating employees' behavioural patterns. Employees with high conscientiousness can exert a systematic approach in their actions, whereas low-level conscientiousness leads to distractive and unsystematic behaviours.

10. Discussion

10.1. Theoretical implications

This study presents important theoretical contributions towards understanding EA and its potential to enhance individual and organisational performance. In contrast with prior reviews in the field, our study shows that employee ambidexterity significantly impacts both individual and organisational performance. This means employees who possess ambidexterity - the ability to balance and excel in both explorative and exploitative activities - are able to proficiently adapt to changing circumstances, generate innovative ideas, and simultaneously exploit existing knowledge and resources to achieve their goals. By doing so, they not only contribute to their own growth and development but also enhance the overall performance of the organisation they are working for. This finding highlights the importance of cultivating and nurturing ambidexterity in employees to ensure long-term success in the future of work.

Furthermore, the study contributes to the existing body of knowledge on ambidexterity by identifying the drivers and constraints of EA through a thematic analysis process. The results of this study offer valuable insights for researchers who are interested in investigating how specific factors can be leveraged to cultivate a workplace culture that enables employees to effectively balance exploration and exploitation activities and develop ambidextrous capabilities. These findings can inform future research endeavours aimed at identifying practical interventions and strategies that organisations can adopt to promote ambidexterity and achieve sustainable competitive advantage. Moreover, the study underscores the need to develop effective strategies to foster employee ambidexterity to ameliorate organisational performance. The findings of this study provide a solid foundation for future researchers to explore and expand the understanding of employee ambidexterity.

10.2. Managerial implications

It is imperative for organisations to comprehend the diverse degrees of performance impact that EA can have and the factors that influence it. The paper will provide significant insights for organisations wishing to utilise their existing resources - employee ambidextrous skills - to their full potential. A recent Deloitte Insights [76] report depicted that the new normal work environments offer endless possibilities for adaptable and innovative employees, despite the numerous challenges they pose [6].

In the post-pandemic era, organisations rely more on employees' ambidextrous capabilities for optimal use of resources. Employees' exploitative and explorative skills enable organisations to benefit from available resources fully [7]. In order to enhance employee ambidextrous capabilities, it is important for organizational decision-makers to understand the drivers and constraints of EA. By gaining a deep understanding of EA's drivers and constraints, organisations can create a supportive work environment that fosters such behaviours, leading to better performance outcomes. In addition, this knowledge will also help employees manoeuvre their

ambidextrous capabilities to improve their productivity [10].

This knowledge also can be utilised to devise efficient training programs that enhance their workforce's ambidextrous skills and advance performance. According to Lim [6], in order to stay relevant in the future job market, employees must continuously develop their digital literacy (which is part of knowledge brokerage activities), as well as their cognitive and emotional intelligence. This recommendation was based on the latest industry reports that predict a significant transformation of current jobs by 2030. The current study highlights the significance of these factors in driving EA and therefore emphasises the crucial role of EA in succeeding in future work. Moreover, Saha et al. [77] underscore the critical role of emotional intelligence in fostering successful leadership that ensures leading by feeling. The authors argue that in this post-pandemic era, leadership prioritising the needs and well-being of employees and customers alike is a mandate, especially in service-oriented industries where people drive businesses. Therefore, leadership training programs focused on these skills will greatly benefit organisations' success.

Furthermore, Lim [6] highlighted the need for revamping human resources' orientation training programs to effectively manage the evolving workforce and stay relevant for the new generations of employees. Orientation training can considerably influence the employees' intrinsic motivation [78], eventually leading to enhanced EA.

Investing in employees' training and career growth can have a significant positive impact on an organisation. The human resource department's role extends beyond managing the workforce to nurturing the talents and skills of employees, creating a productive and prosperous work environment [79]. By fostering ambidexterity in employees, organisations can create a more agile and innovative culture, which can lead to improved performance and a competitive advantage. Studies have consistently shown that such investments lead to increased job satisfaction and higher employee retention rates [80]. Kumar's [80] study highlights the significance of employee attrition in contributing to the direct and indirect expenses associated with personnel replacement. Prioritising employee growth fosters a culture of continuous learning and improvement, leading to a more productive organisation and attracting top talent in an era of evolving work landscapes.

11. Conclusions

11.1. Key takeaways

In today's work environment, where remote work has become the norm due to COVID-19 disruptions, it is crucial to have employees who possess ambidextrous skills to improve organisational and employee performance. This scoping review aims to analyse current literature to identify the drivers and constraints affecting positive performance outcomes of employees' ambidextrous skills. For this scoping review, we followed the PRISMA-ScR guidelines. The significance of employees' ambidextrous skills in achieving improved performance outcomes has only recently become a subject of scholarly exploration. As a result, the number of studies examining this subject is relatively limited, and we have identified only twenty-three studies for this review.

We conducted a scoping review of studies that investigated the relationship between employee ambidexterity and performance. Our research identified five categories of drivers that motivate employees to be ambidextrous and four barriers that can prevent EA from delivering superior results. Furthermore, we discovered that employee ambidexterity has the potential to enhance sixteen distinct types of performance on multiple levels. Our findings also suggest that many industries have not yet fully utilised the potential of EA. This study adds to the existing body of knowledge on ambidexterity and provides insights for researchers and practitioners seeking to enhance their understanding of this critical area. It has the potential to influence decision-making processes in various industry domains. This paper can also serve as an essential resource for policymakers. Additionally, academic research on EA is still in its early stages of development. Therefore, this review could be a valuable resource to inform and guide future research.

11.2. Limitations

Locating all the relevant articles for this review is one of the areas where this study may have suffered some limitations. The reason could be the unavailability of all articles on the selected databases or the papers using different strings than the search terms. The snowballing process or backward search has been espoused to mitigate the impact of any missing publications. In addition, some relevant articles may not be included due to adopted inclusion criteria of English language only. Finally, this study has only reviewed journal articles and conference papers. A thorough future review using an all-encompassing literature base, including books, dissertations, web articles, editorials and other literature reviews, may provide a much deeper understanding of factors that impact EA and its performance implications.

11.3. Future research directions

Through a meticulous scoping review of scholarly work on the drivers, constraints, and performance consequences of EA, we have identified several literature gaps in this domain. This insights can serve as a valuable resource for future research aimed at galvanising EA and broadening the existing understanding of its potential benefits. Our analysis suggests several areas for future research.

Firstly, exploring how to implement the EA drivers identified in this paper within different organisational contexts could yield valuable insights into practical strategies for integrating these drivers to elevate EA skills and improve overall organisational performance. Additionally, observing the manifestation of these drivers and constraints of EA in industries not previously studied, such as health and aerospace, would be intriguing. For those interested in exploring this concept further, this could offer a prospective trajectory, as every workplace can benefit from employee ambidexterity. Another promising avenue for researchers is to study how these

identified constraints, especially functional tenure, affect an employee's ability to be ambidextrous in different organisational contexts.

The available data analysis indicates that the cross-sectional approach is predominantly used in this research area. While this approach may be practical, it is crucial to note that longitudinal studies provide a more comprehensive and in-depth understanding of the topic of interest [24]. Longitudinal studies can offer academia a comprehensive insight into the potential of employees' ambidextrous capabilities and the distinct factors that influence them.

Ethics declarations

Review and/or approval by an ethics committee was not needed for this study because it does not involve the participation of human subjects.

Data availability statement

The data used in this scoping review are derived from publicly available sources, including peer-reviewed articles, books, and grey literature. All references cited in the paper are appropriately credited. No specific datasets were generated or analysed for this review. The comprehensive list of included studies and relevant information can be found in the reference section. A data extraction table can be found as a supplementary document to this paper named 'Supplementary table 1- Characteristics of Included Studies'.

CRediT authorship contribution statement

Jane Joseph: Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Selena Firmin:** Writing – review & editing, Validation, Supervision, Methodology, Formal analysis. **Taiwo Oseni:** Writing – review & editing, Validation, Supervision, Methodology, Formal analysis. **Andrew Stranieri:** Writing – review & editing, Validation, Supervision, Methodology, Formal analysis.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2023.e22493>.

Appendix

Table 2

Driver and constraints of EA - factors and literature reference.

Drivers of EA	
1	<p>Organisational factors</p> <p>Organisational support and context (Affum-Osei et al., 2020); (Schultz et al., 2013); (Schnellbacher et al., 2019)</p> <p>Organisational architecture (Schnellbacher et al., 2019)</p> <p>Organisational tenure (Mom et al., 2015)</p> <p>Connectedness (Vidgen et al., 2011), Social network (Yap et al., 2020)</p> <p>HRM practices (Prieto-Pastor & Martin-Perez, 2015); (Kao & Chen, 2016); Internal resources (Schultz et al., 2013)</p> <p>Extrinsic reward (Kao & Chen, 2016)</p> <p>Leadership effects (Alghamdi, 2018); Manager's ambidextrous orientation (van der Borgh et al., 2017).</p>
2	<p>Social Connectedness related factors</p> <p>Connectivity and social network (Vidgen et al., 2011); Yap et al. (2020).</p>
3	<p>Employee behaviours related factors</p> <p>Identification: customer-employee, customer-organisation (Luu et al., 2018), organisational (van der Borgh et al., 2017)</p> <p>Types of motivation: intrinsic (Kao & Chen, 2016); public service (Luu et al., 2018)</p> <p>Motivational orientation: locomotion, assessment (Jasmand et al., 2012)</p> <p>Knowledge brokerage (Yap et al., 2020).</p>
4	<p>Employee personality related factors</p> <p>Attitude towards risk: averse, loving (Hong et al., 2018).</p> <p>Career adaptability: control, confidence (Affum-Osei et al., 2020).</p> <p>Cognitive styles: analytic, intuitive (de Visser & Faems, 2015).</p> <p>Emotional intelligence, Proactive personality (Kao & Chen, 2016).</p> <p>Proactive personality (Kao & Chen, 2016).</p>

(continued on next page)

Table 2 (continued)

Drivers of EA	
5	Openness to experience (Mao & Washida, 2019). Work environment related factors Dynamic (Yap et al., 2020). Interdependent (Mom et al., 2015) Uncertain (Mom et al., 2015); (Pietsch et al., 2022)
Constraints of EA	
1	Functional tenure (Mom et al., 2015)
2	Supervisory ratio (Kobarg et al., 2017)
3 & 4	Team identification, Bounded discretion (Jasmand et al., 2012)

Table 4
Reported individual and organisational performance impact.

Individual Performance Impact		
1	Affum-Osei et al. (2020)	Employees' ambidextrous behaviour and service performance
2	Alghamdi, (2018)	Employee ambidexterity and Employee innovative performance
3	Hong et al. (2018)	Individual ambidexterity and individual performance
4	Jasmand et al. (2012)	Customer Service Representatives' Ambidextrous Behaviour and sales performance
5	Kao & Chen (2016)	Frontline employee's ambidextrous behaviours and service Performance
6	Kobarg et al. (2017)	Individual ambidexterity and research performance
7	Mao & Washida (2019)	Researcher ambidexterity and research performance
8	Momet et al. (2015)	Manager's ambidexterity and manager's performance
9	Rosing & Zacher (2017)	Individual ambidexterity and innovative performance
10	Schultz et al. (2013)	R&D employee multitasking (explorative- exploitative tasks) and employee R&D performance
11	Sun et al. (2019)	Employees' exploitative and explorative system use, employees' task performance
12	Torres et al. (2015)	Middle managers' ambidexterity and individual decision performance
13	van der Borgh et al. (2017)	Salespersons' Ambidextrous Product Selling and performance stability
14	Zhang et al. (2022)	Employee exploration and exploitation and task performance
15	Vidgen et al. (2011)	Individual IS managers ambidexterity and individual performance
Organisational Performance Impact		
1	de Visser & Faems, (2015)	CEOs' tendency for exploration or exploitation and firm-level innovation performance
2	Hashim et al. (2017)	Ambidextrous entrepreneur and firm performance.
3	Lawrence et al. (2022)	Top management team (TMT) leaders' ambidexterity and innovation and operational success
4	Luu et al. (2018)	Public employees' ambidexterity and customer value co-creation
5	Pietsch et al. (2022)	School leaders' exploitation and exploration activities and school innovative performance
6	Prieto-Pastor & Martin-Perez, (2015)	Employees Ambidexterity and organisational ambidexterity
7	Schnellbacher et al. (2019)	Individual ambidexterity, positive performance effects across different organizational levels
8	Yap et al. (2020).	Managerial ambidexterity and Firm performance

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