administrative sciences

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Organizational Culture Enabler and Inhibitor Factors for Ambidextrous Innovation

Mohammad AlSaied * and Patrick McLaughlin

School of Aerospace, Transport and Manufacturing, Cranfield University, Cranfield MK43 0AL, UK
* Correspondence: mohammad.alsaied@cranfield.ac.uk

Abstract: Ambidextrous innovation is considered to be a key framework for innovation that offers organizations the ability to maintain their current level of competitiveness and develop and sustain a long-term competitive advantage. However, the implementation of ambidextrous innovation is constrained by an organization's culture. Thus, the aim and objective of the present research are to explore the literature deeply and attempt to understand both organizational culture and ambidextrous innovation, along with key cultural aspects with regard to ambidexterity. The present research deeply dived into the model of organizational culture and attempted to build synergy between each model with respect to ambidexterity. The results of the present research suggest that Cameron and Quinn's competing value framework, once amalgamated with the Schein model, creates an organizational culture framework that can be used to develop a culture that is best suited to the implementation of ambidextrous innovation. The Schein model provides a comprehensive guideline for each value of the competing value framework. Further, the present research also extracted key insights with regard to the role culture can play in innovation in general and ambidextrous innovation in particular. Finally, the present research also attempted to build a list of culture enablers and inhibitors that can facilitate and impede the process of ambidextrous innovation.

Keywords: organizational culture; ambidextrous innovation; exploration; exploitation; culture models; conceptual framework

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Citation: AlSaied, Mohammad, and Patrick McLaughlin. 2024. Organizational Culture Enabler and Inhibitor Factors for Ambidextrous Innovation. *Administrative Sciences* 14: 207. https://doi.org/10.3390/admsci14090207

Received: 14 July 2024
Revised: 31 August 2024
Accepted: 3 September 2024
Published: 6 September 2024

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1. Introduction

Innovation in organizations is a key issue which managers face (Kline and Rosenberg 2009). Innovation can make organizations highly efficient and effective (Ashraf and Khan 2013) and at the same time satisfy the key needs of stakeholders (Mahmoud et al. 2018) such as consumers through high-end customer value. Further, innovation can help organizations build the capacity to face any environmental uncertainties with significant effects on organizational performance (Kafetzopoulos et al. 2020). However, organizations face a problem with regard to undertaking innovation (Klein and Sorra 1996). Although the literature has suggested various tools and processes that can augment project managers' ability to undertake innovation (Lopetcharat et al. 2022), these tools and processes work effectively only in the presence of various contextual factors such as resources, size, and others. Further, an important insight suggests that innovation tools and processes can play the role of augmenting existing innovation activities within an organization rather than initiating and fostering innovation (Klein and Knight 2005). Consistent with this notion, review research has concluded based on empirical evidence that key factors such as organizational culture play a key role in innovation activities within an organization (Büschgens et al. 2013).

Organizational culture can be defined as customs, norms, beliefs, values, and attitudes that shape behavioral patterns in an organization (Ouchi and Wilkins 1985). Organizational culture is linked with various key aspects such as organizational performance (Prajogo and McDermott 2011), shareholder value (Szczepańska-Woszczyna et al. 2021), customer

satisfaction, and innovation within an organization (Gillespie et al. 2008). It is argued that organizational culture is now a key antecedent of innovation in organizations (Tian et al. 2018). Organizational culture establishes the norms of various key aspects of innovation which include freedom of discussion and risk-taking to experiment with new ideas (Sadegh Sharifirad and Ataei 2012), learning and development (Sanz-Valle et al. 2011), knowledge acquisition and sharing (Auernhammer and Hall 2014), and the continuous development of products and services (Belassi et al. 2007). Thus, it can be concluded that key contextual factors such as resources and size may be important facilitators of innovation; organizational culture has a more robust impact in that innovation is a consequence of behavioral patterns established by the culture of an organization.

Researchers, along with culture as a key antecedent, have also been focusing on the framework and strategy of innovation. Organizations need to strategize their innovation to better achieve strategic objectives (Adner 2006). The culture of an organization that fosters the open sharing and experimentation of ideas will be a key element in strategizing innovation (Chen et al. 2018). However, an effective and goal-oriented innovation strategy must be adopted by organizations explicitly. The literature has suggested various key innovation strategies such as open innovation (Huizingh 2011), lean innovation (Solaimani et al. 2019), disruptive innovation (Hopp et al. 2018), incremental innovation, and others (Souto 2015). Although these strategies are highly effective in helping organizations achieve their strategic objectives, particular emphasis is placed on ambidextrous innovation.

Ambidextrous innovation is referred to as an organizational innovation strategy in which organizations tend to pursue both explorative (radical) and exploitative strategies (incremental) at the same time. Ambidextrous innovation is considered a paradox in which exploitative and explorative strategies of innovation are considered opposite but at the same time complementary in nature (Turner et al. 2013). Under the ambit of ambidextrous innovation, organizations tend to exploit existing resources to improve existing product lines and services while at the same time pursuing knowledge to undertake breakthroughs both in products and business models (Andriopoulos and Lewis 2010). Thus, the goal of ambidextrous innovation is to achieve a balance between short-term performance through an exploitative strategy and long-term growth through an explorative strategy (Lin et al. 2013).

Since ambidextrous innovation enables firms to strike a balance between short-term operational efficiency and long-term growth, its adoption is intimately associated with the creation of sustainable business models (Tomislav 2018). Organizations can develop products and services that not only satisfy the needs of the market today but also help achieve sustainability goals in the long run by promoting resource efficiency, lowering environmental impact, and building long-term resilience (Meramveliotakis and Manioudis 2021). This can be achieved by pursuing breakthrough innovations along with incremental improvements. By taking two approaches, companies can ensure that their strategies for the future and the present will incorporate sustainability (Tomislav 2018; Meramveliotakis and Manioudis 2021).

Although the ambidextrous innovation strategy seems very promising, researchers have discussed various key problems faced by managers in its implementation (Turner et al. 2013). It is argued that various key issues such as boundary tension between exploration and exploitation have presented roadblocks to its effective implementation (Gregory et al. 2015; Zimmermann et al. 2018). These boundary issues, as the literature suggests, can create problems such as the allocation of both financial and human resources towards balancing exploration and exploitation. Therefore, resolving key tensions within ambidextrous innovation is key to its effective implementation (Zimmermann et al. 2018). The existing literature suggests that organizational culture can present an opportunity in resolving such key issues. A culture that appreciates and promotes flexibility, adaptability, the open discussion of ideas, and risk-taking can help address the challenges of balancing exploration and exploitation (Bruyaka and Prange 2020). Such a culture effectively addresses boundary tension by effective collaboration between teams and resource sharing. Although such benefits are discussed in the current literature, it is necessary to understand this phenomenon

more comprehensively and broadly. Thus, there is a need for a comprehensive narrative analysis of the literature. Such a comprehensive narrative analysis of the literature will delve into the key aspects of culture, exploring key cultural enablers and inhibitors, if any, that can impact the implementation of ambidextrous innovation strategies. Therefore, the purpose of the present research is to dive deep into the literature intersecting organizational culture and ambidextrous innovation to understand how culture can help implement ambidextrous innovation. The present research will specifically attempt to explore the key cultural enablers and inhibitors of ambidextrous innovation.

2. Literature Review

The present research conducted a comprehensive literature review of organizational culture and ambidextrous innovation.

2.1. Ambidextrous Innovation

Ambidextrous innovation as a scientific construct emerges from organizational ambidexterity (Zhao and Gao 2024). Organizational ambidexterity is defined as the ability of organizations to effectively and efficiently manage current business and consumer demands while being adaptive to changes in the environment at the same time (Duncan 1976). The term organizational ambidexterity garnered a great amount of attention and interest from researchers in the wake of ongoing external changes at the time (Turner et al. 2013). Organizational ambidexterity allows organizations to navigate a complex and ambiguous industrial and environmental landscape with the help of exploring knowledge to manage environmental uncertainty and effectively deal with customers' and stakeholders' demands (Uhl-Bien and Arena 2018) and at the same time exploit current and existing capabilities to meet the current demands and needs of consumers (Scuotto et al. 2020). Thus, ambidextrous innovation is helpful in balancing the opposing but yet complementary objectives of firms to sustain long-term performance (Zhang et al. 2022a). Researchers working in the field of innovation management have also realized the important application of managing opposing and yet complementary goals. This includes exploitative or incremental innovation to bring changes to current and existing product lines and services while at the same time undertaking explorative or radical innovation to create new and radical products and services (Harmancioglu et al. 2020). Thus, the concept of ambidextrous innovation was introduced to foster innovation in organizations by balancing both incremental and radical innovation (Zhang et al. 2021a). Table 1 introduces other key innovation strategies along with ambidextrous innovation for comparison purposes.

Ambidextrous innovation, on the other hand, can be defined as an organizational capability to undertake exploratory (radical) and exploitative (incremental) innovation at the same time (O'Reilly and Tushman 2013). Disrupting current knowledge and technology; finding new designs, techniques, and processes; producing new goods or services; and expanding into untapped markets are all considered aspects of explorative innovation (Heidhues et al. 2016). At the same time, areas such as cutting costs and raising the caliber of the final product or service and enhancing and upgrading designs, techniques, and procedures based on knowledge and technology are considered to be aspects of exploitative innovation (Nigg-Stock et al. 2023). Ambidextrous innovation is also seen from the standpoint of a paradox in which both explorative and exploitative innovations can be seen as opposing but yet complementary in their nature (Andriopoulos and Lewis 2010). Thus, balancing the paradoxes of explorative and exploitative innovations is highly important from the standpoint of an effective innovation management strategy (Papachroni et al. 2015). Further, it is also imperative to mention that an increasing amount of the literature refers to ambidextrous innovation as a dynamic capability (Randhawa et al. 2021b). This means that ambidextrous innovation is a kind of resource or capability that an organization can employ to secure its long-term strategic performance (Santoro et al. 2019). Ambidextrous innovation is a kind of resource that is difficult to imitate by an organization's competitors and is key to gaining a competitive advantage (Tushman et al. 2003). Finally, it is argued

that ambidextrous innovation has positive impacts on various key performance indicators of firms. Empirical evidence suggests that ambidextrous innovation can have a positive impact on an organization's financial performance (Tsai and Wang 2017), customer satisfaction (Agnihotri et al. 2017), and strategic performance (Xie and Gao 2018).

Table 1. Innovation strategies.

S. No.	Innovation Strategies	Explanation
1	Open innovation	Involves leveraging external and internal ideas and paths to the market. Organizations collaborate with external partners to innovate, reducing costs and risks (Huizingh 2011).
2	Disruptive innovation	Refers to innovations that create new markets by discovering new categories of customers. They often disrupt existing markets by providing simpler, more affordable alternatives (Hopp et al. 2018).
3	Incremental innovation	Focuses on making small, gradual improvements to existing products, services, or processes, enhancing their efficiency, performance, or quality over time (Souto 2015).
4	Frugal innovation	Involves developing solutions that are cost-effective and meet the needs of consumers in emerging markets. It emphasizes simplicity and affordability (Hossain 2018).
5	Lean innovation	Centers on minimizing waste and maximizing value. This approach is iterative, focusing on quick prototyping and feedback loops to develop products efficiently (Solaimani et al. 2019).
6	Ambidextrous innovation	Refers to the ability of an organization to balance and manage both incremental and radical innovations simultaneously, fostering both stability and change (O'Reilly and Tushman 2013).

2.1.1. Exploratory Innovation

The concept of explorative innovation emerges from exploratory learning, which March (1991, p. 85) defines as "experimentation with new alternatives that have returns that are uncertain, distant, and often negative". Hence, consistent with this notion, explorative innovation can be referred to as the dynamic capability of a firm to acquire external knowledge and leverage it for the purpose of experimenting and discovering new products and services that help the organization develop and sustain its competitive advantage for the long run (Cenamor et al. 2019). Thus, it can be argued that explorative innovation is defined by the activities in which firms undertake active research and development, experiment with new ideas, cultivate new and divergent thinking, and take risks to develop new and radical product and service solutions (He and Wong 2004). Further, it can be argued that explorative innovation is an attempt to diverge from the current status quo with respect to products and services offered, in relation to competition in the industry, challenges, and changes in previous methods, business models, supply chain operations, and consumer engagement. It shapes new and advanced products with new features and technology, creates new market segments, new positioning, new distribution channels, and other creative combinations of the marketing mix (Buccieri et al. 2020; Evanschitzky et al. 2012; Chang and Hughes 2012). Thus, as a result of such an endeavor with respect to explorative innovation, the tangible outcome will reflect new products, services, and processes that will be significantly different from the previous ones and create creative destruction in the market (Yalcinkaya et al. 2007).

2.1.2. Exploitation Innovation

Similar to explorative innovation, the exploitative innovation construct was developed from exploitative learning, which March (1991, p. 85) defines as "the refinement and extension of existing competencies, technologies, and paradigms", inferring organizational behaviors marked by refinement, efficiency, convergent thinking, and gradual

but consistent product improvement (He and Wong 2004). Therefore, consistent with the notion of exploitative learning, exploitative innovation can be defined as innovation activities in which an organization attempts to improve existing products and services to better meet gradually changing customer needs (Heidhues et al. 2016). Exploitative innovation can entail various activities from a products and services standpoint. These activities include packaging improvement, cost efficiency, market penetration, feature and taste improvement, and others (Kraft and Bausch 2016). Thus, it can be said that exploitative innovation is the response to learning about and gaining fundamental knowledge about already-existing items, which leads to modifications in the features and technology of such products (Morgan and Berthon 2008). Further, exploitative innovation also entails enhancing and perfecting current processes, including operations and supply chain management, by modifying current technology, product mix combinations, market segmentation, and product composition (Azadegan and Wagner 2011). So, as a result, organizations are always in a better position to develop and execute well-defined product–market fit solutions (Stanko et al. 2015), which give them the ability to sustain their market composition and position.

2.1.3. Balancing Exploratory and Exploitation Innovation

The literature clearly argues in favor of having a level of balance between exploration and exploitation innovative activities (March 1991). The literature suggests that a rigid focus on explorative innovative activities may lead to an organization incurring a huge amount of costs as a result of many failed experiments and insufficient return in the form of successful ones (Zhang et al. 2015). On the other hand, a focus on exploitative innovative activities can result in short-term benefits at the expense of a compromised long-term competitive advantage due to a lack of innovative solutions matching the changing external and market environments (Limaj and Bernroider 2019). Thus, it is suggested in the literature that a balance between exploitation and exploration is a strategic choice in which an organization can reap short-term benefits and rewards in the form of exploitative activities and secure long-term strategic and competitive advantage through explorative activities (Wang et al. 2017).

Although it is suggested that balancing exploration and exploitation innovations can be beneficial, it can also be mired with challenges (Kim et al. 2012). One of the key challenges is determining the priority between exploration and exploitation. Some researchers suggest that top management commitment is an important antecedent to innovative activities within organizations (Mahmood and Mubarik 2020). Due to immediate and emerging benefits, top management may be more focused on exploitative activities compared to explorative ones. Further, recurrent failure in experimentation related to explorative activities may also become frustrating for top management (Lennerts et al. 2020). Additionally, explorative activities may also require external resources and knowledge, and top management may be unwilling to invest in these if existing resources, knowledge, and capabilities offer them a better return in terms of various performance measures (Cho et al. 2020).

Another interesting challenge reported in the current literature is harmonizing the exploration and exploitation of innovation within the organization. The literature also suggests that a harmonized and coherent innovative activity will be beneficial (Zhang et al. 2023). It is argued that balancing exploration and exploitation can be complementary in a way that advanced knowledge produced and used during explorative activities can significantly support exploitative activities (Farzaneh et al. 2022). Exploratory knowledge can help improve current and existing products' features, attributes, and functionality in significant ways. As this knowledge is advanced, applying it to exploitative activities can better inform teams about features and functionalities to be improved (Magnusson et al. 2020). Further, exploitative activities can also provide insights to teams working on explorative innovation regarding potential sources of new technology to be developed. The exploitative teams can inform them about problems and opportunities that exist in the market (Johnson et al. 2022). This can provide insights into new and radical innovation.

Thus, such insights can enable explorative teams to develop technologies and innovations with higher chances of acceptance from the market and consumers (Chen and Liu 2020).

2.1.4. Impact of Ambidextrous Innovation

Ambidextrous innovation, which is all about balancing exploratory and exploitative innovation, has significant implications for organizations. Ambidextrous innovation is referred to as a key strategic framework that helps organizations channel their efforts toward innovative activities (Wang et al. 2020). In other words, it can be argued that organizations looking at innovation as a tool for sustained competitive advantage can implement ambidexterity as a key innovation framework (Harmancioglu et al. 2020). Further, ambidexterity is not just about balancing explorative and exploitative innovation but is also viewed through the lens of strategic advantages. Explorative innovation helps organizations focus on long-term objectives in which they attempt to obtain knowledge that can be used to develop products and services that secure long-term competitive advantage and organizational performance (Jin and Zhou 2021). At the same time, exploitative innovation can help organizations effectively secure short-term advantage and performance. Thus, ambidexterity can impact organizations by both undertaking innovation and achieving the strategic objectives of competitive advantage and performance (Jia et al. 2022).

Apart from ambidexterity being an innovation framework and a tool of strategic performance, other key benefits referred to in the literature include environmental adaptability (Gong et al. 2021), customer focus (Agnihotri et al. 2017), and organizational performance (Gong et al. 2021). One of the key operational benefits of ambidexterity as a default approach in an organization is adaptability to a changing market environment (Huang et al. 2020). Teams focused on exploitative innovation through sense-making develop an understanding of the current and future needs of consumers. These teams develop comprehensive ideas regarding future consumer needs, demands, and the competitive landscape (Wang et al. 2021). Such insights shared with exploratory innovation provide them with a strategic direction to seek knowledge, technology, and processes that can better satisfy future consumer needs and secure competitive relevance (Peters and Buijs 2022). Further, it is also mentioned in the literature that ambidextrous innovation and the resulting balance between exploration and exploitation can also help organizations understand the competitive landscape. This understanding can help organizations better align their innovative strategies to meet challenges from the competitive environment (Huang et al. 2020).

Customer centricity and focus are argued to be the key elements of organizational operations that can help create value for customers. Consumer insights embedded in products impact customer loyalty and satisfaction (Paswan et al. 2021). Thus, organizations need to continuously seek consumer inputs and ideas. Exploitative innovation can help gather such insights and inputs from consumers to improve products and services that best satisfy them (Gurtner and Reinhardt 2016). Constant feedback from consumers can give exploitative innovation teams ideas about key features to improve. Further, insights from consumers can also be helpful for the exploratory innovation team to improve designs and develop new products that best align with consumer needs and demands (Berthon et al. 1999). Finally, organizational performance is a key consequence of ambidextrous innovation in both the short and long term (Gong et al. 2021). Exploitative innovation helps maintain and improve organizational performance by constantly improving existing products and services (Hwang et al. 2023). Exploitative innovation secures organizational performance in the short run by optimizing existing resources, processes, and products to maximize efficiency and profitability (Schnellbächer and Heidenreich 2020). Finally, exploratory innovation helps improve long-term performance by identifying and capitalizing on new opportunities, driving growth, and ensuring the organization remains competitive and adaptable in evolving markets (Jia et al. 2022).

2.1.5. Implementing Ambidextrous Innovation

The comprehensive literature has been analyzed with regard to the impact of ambidextrous innovation, balancing exploration and exploitation, and the characterization of ambidextrous innovation itself. However, a key issue remains the implementation of ambidexterity within an organization. The literature has suggested various key strategies that can help to implement ambidexterity within an organization. These strategies include team definitions (Jørgensen and Becker 2017), boundary specification (Russo and Vurro 2010), strategic alignment (Lubatkin et al. 2006), and others. Team definition is said to be a key strategy in the implementation of ambidextrous innovation. Team definition refers to the process of developing a team dedicated to ambidextrous innovation (Zacher and Rosing 2015). This ambidextrous innovation team will undertake both explorative and exploitative activities to implement ambidexterity in the organization. The literature has suggested that such dedicated teams can be effective in not just implementing but also balancing the two paradoxes of ambidexterity (Fiset and Dostaler 2013).

Second, a key implementation strategy is referred to as boundary specification of innovative activities. In this strategy, organizations tend to create two separate teams for ambidextrous innovation, each tasked with explorative and exploitative innovation separately (Zhang et al. 2022a). The literature suggests that developing strategic business units for explorative and exploitative innovation is an effective strategy to implement ambidextrous innovation (Xie et al. 2022). The core idea in developing strategic business units for ambidextrous innovation seems to be completely separating explorative and exploitative innovation activities with the aim of enhanced focus on each activity (Li et al. 2016).

Strategic alignment and leadership support are referred to as key antecedents to implementing ambidextrous innovation (Heavey et al. 2015). Empirical evidence suggests that a leadership vision for developing and sustaining long-term competitive advantage prompts an organization to seek out explorative innovation. In this sense, top management commitment, including resource allocation, will accelerate innovative activities toward ambidextrous innovation (Mihalache et al. 2014). Finally, resources must be allocated, and both explorative and exploitative innovation activities must be undertaken to achieve business objectives enshrined in the business's vision and mission (Yang et al. 2023).

Apart from the other key issues, the present research has attempted to explore the role of organizational culture in innovation in general and ambidextrous innovation specifically. The literature has suggested that organizational culture generally plays an important role in fostering ambidexterity in an organization (Pelagio Rodriguez and Hechanova 2014). Organizational culture provides the necessary environment where not only innovation is fostered but a balance is achieved. Innovation requires a culture where experimentation and risk-taking for positive outcomes are appreciated (Lavie et al. 2010). Further, culture develops an environment of appreciation for new ideas which motivate individuals and teams to perform better on the innovation front (Khan and Mir 2019). A supportive organizational culture also makes it easy for explorative and exploitative teams to collaborate to streamline innovation activities. In addition to encouraging innovation, a culture that values both exploration and exploitation also places a strong emphasis on efficiency, optimization, and leveraging current advantages (Raisch and Birkinshaw 2008). By cultivating an atmosphere where curiosity is rewarded with discipline, organizations may successfully balance exploratory and exploitative innovation, resulting in breakthrough developments and ongoing growth (Raisch et al. 2009).

2.2. Organizational Culture

Organizational culture is a key construct that has been researched by management scholars over time (Rostain 2021). Organizational culture is defined as beliefs, customs, norms, values, and stories that shape the behavioral patterns of an organization (Schein 2010). Researchers have concluded based on empirical evidence that organizational culture has a significant impact on the organization itself (Sackmann 1991) and various other elements such as organizational performance (Sackmann 2021), corporate image (Jo Hatch

and Schultz 1997), and innovation (Büschgens et al. 2013). Regarding innovation, scholars have paid special attention to it and concluded that a culture that appreciates the open discussion of ideas, experimentation, and critical thinking is capable of developing innovative products and services for its consumers (Chandler et al. 2000). Thus, it can be argued that the culture of an organization has become a crucial antecedent to innovation within the organization (Herbig and Dunphy 1998).

Further, researchers have argued that organizational culture related to innovation is difficult to measure and comprehend due to its explicit focus on beliefs, customs, norms, values, and stories (Schein 1993). However, Wilkins and Ouchi (1983) have argued that it may be easy and simple to measure culture in relation to innovation based on its type, objectives, and strategies for boosting innovation. An important study with regard to innovation and culture was undertaken by Büschgens et al. (2013), using meta-analysis as a methodology. They argued that from the aspect of values, beliefs, and norms, "managers of innovative organizations most likely implement a developmental culture, which emphasizes an external and a flexibility orientation. Yet group and rational cultures are to some extent consistent with the goals of an innovative organization and may thus be appropriate social control strategies. Hierarchical cultures emphasize control and an internal orientation and are less likely to be found in innovative organizations" (p. 763). Therefore, it can be concluded from the existing literature that a certain type of culture is most suitable for undertaking innovation within an organization (Hogan and Coote 2014).

As an organizational culture of openness, flexibility, and reflexivity is a key determinant of innovation, certain types of culture also play an important role in ambidextrous innovation (AlSaied and Alkhoraif 2024). Ambidextrous innovation, which is all about the management of explorative and exploitative innovation, requires certain customs, norms, values, stories, and behaviors (Wang and Rafiq 2014). The literature suggests that to achieve ambidextrous innovation, a culture that allows an organization to effectively balance ideas, expertise, and information to produce new goods and services while improving already-existing ones is critical (Khan and Mir 2019). Boundary issues and processes between explorative and exploitative innovation are key issues that sometimes hinder the balance required for ambidextrous innovation. However, a culture of empowerment that encourages people to take risks, seek out fresh ideas, engage in open discussion, and collaborate actively can certainly help achieve the delicate balance required for implementing ambidexterity (Harmancioglu et al. 2020). Thus, given the importance of the type of culture that empowers organizations to undertake innovation and implement ambidexterity, the present research has attempted to review the literature on various conceptual definitions and explanations of culture and its key implications for innovation in general and ambidexterity specifically.

a. Schein's Model of Organizational Culture

One of the key conceptual contributions to the conceptualization of organizational culture regarding beliefs, customs, norms, values, and stories was made by Edgar Schein, which is referred to as Schein's model of organizational culture. Schein defines organizational culture on three different levels in terms of beliefs, customs, norms, values, and stories (Schein 2010). These levels can be identified as artifacts and behaviors, espoused values, and assumptions. According to Schein (2010), artifacts of organizational culture refer to any key behavioral elements that are both tangibly and verbally identifiable. These elements can include various aspects such as presentation style, dress code, office routines, and many others. Overall, it can be concluded that artifacts are any key and visible elements of organizational culture that make it distinct and identifiable. Secondly, espoused values refer to an organization's stated values, norms, customs, and patterns of behavior. This is the way in which members display the organization to others as well as to themselves. Public declarations of identity and official ideologies frequently convey this. It occasionally serves as a forecast of the members' ideal future selves. Finally, assumptions shared by the organization refer to codes of conduct that are not formalized consciously but are under-

taken and displayed unconsciously by the members. Schein (2010) defines assumptions as the key essence of the culture that binds its members together in a bond.

The Schein model offers implications for innovation in the organization in general and ambidexterity in a specific context. The literature suggests that artifacts of culture, such as language including metaphors related to exploration and exploitation, can serve as anchor points for innovation and ambidexterity. Artifacts can play a critical role in conveying key ideas necessary for product development and improvement (Martins and Terblanche 2003). On the other hand, assumptions that entangle teams to collaborate effectively regarding exploration and exploitation can be an important predictor for the successful implementation of ambidexterity (Du and Xie 2021). Finally, important implications can arise with regard to espoused values that explicitly seek the balancing of paradox and implementation of ambidexterity (Makumbe and Washaya 2022). Thus, it can be concluded that Schein's model conceptualizing culture in terms of artifacts, values, and assumptions can serve as an anchor point for organizations to seek both the exploration and exploitation of innovation in an effective manner (Hogan and Coote 2014).

b. Hofstede's Cultural Dimensions

Another important theoretical model used to study organizational culture is Hofstede's cultural dimension model developed by Geert Hofstede (Hofstede 1984). Hofstede (1984, 2011) defined culture in general and in relation to organizations in terms of six dimensions: power distance, uncertainty avoidance, individualism–collectivism, masculinity–femininity, and short- vs. long-term orientation (Hofstede 1984). The framework has served in many empirical studies analyzing culture at both the macro level (in terms of countries) and the micro level (in terms of organizations). The framework has served as an anchor point for studying organizational culture from important aspects such as innovation and performance (Prim et al. 2017). Further, the framework has also provided researchers with a toolkit to improve culture to make it more effective in helping organizations achieve their key strategic objectives (Escandon-Barbosa et al. 2022).

Hofstede's dimensions have a significant impact on innovation (Khan and Cox 2017). The literature suggests that organizations that rank lower in power distance, are able to avoid uncertainty through flexibility, maintain a delicate balance between individualism and collectivism, and focus on both long-term vision and performing effectively in the short term tend to enhance innovation within the organization (Kaasa and Vadi 2010). From the point of view of ambidexterity, Hofstede's cultural dimensions offer a direct implication under the scope of short- vs. long-term orientation (Szymura-Tyc and Kucia 2016). Hofstede provided a definition that significantly addresses the balancing of the ambidexterity paradox. He argued that "Long Term Orientation stands for the fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, Short Term Orientation, stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of 'face', and fulfilling social obligations" (Hofstede 2001, p. 359). Consistent with such assertions, ambidextrous innovation also seeks to achieve longer-term rewards by developing explorative innovation while maintaining the status quo by constantly improving existing products and services.

c. Cameron and Quinn's Competing Value Framework

As shown in Figure 1, Cameron and Quinn's competing value framework conceptualizes culture in general and organizational culture specifically in the context of four competing values: hierarchy, clan, adhocracy, and market (Cameron et al. 2022; Quinn and Rohrbaugh 1983). The competing value framework postulates that the vast majority of organizations can be characterized in terms of two dimensions, a horizontal and vertical axis, each representing values that are opposing to each other or competing (Schneider et al. 2013). The first dimension, which is displayed along the vertical axis, illustrates the competing values of an organization's culture's extreme flexibility and stability. The horizontal axis indicates the organization's internal or external focus. Good team dynamics

and well-defined procedures are the advantages of organizations with a strong, internally oriented culture, while consumer centricity indicates the organization's external focus (O'Neill and Quinn 1993).

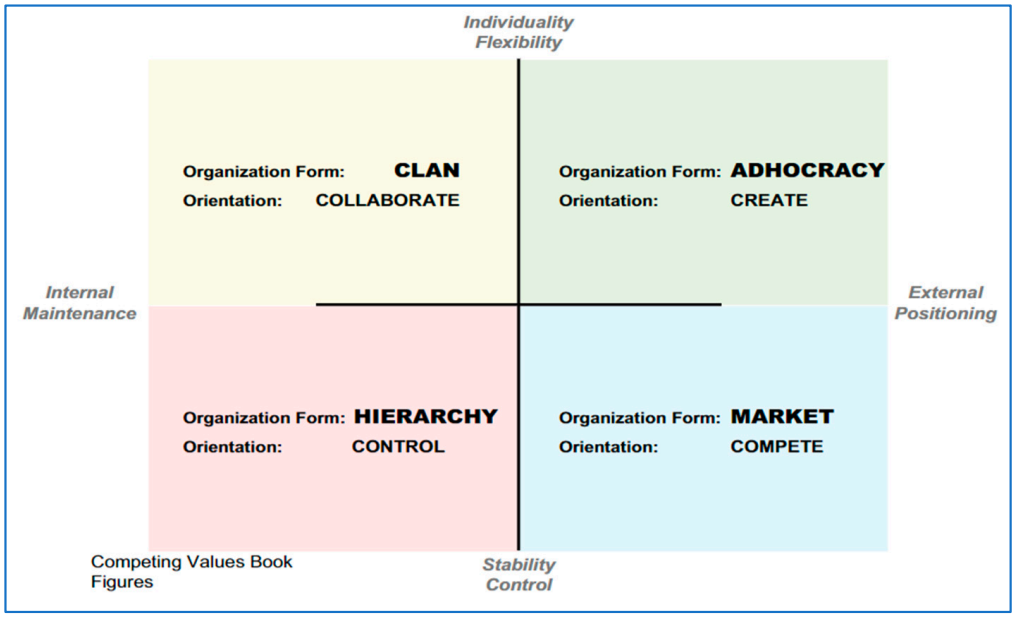

Figure 1. Competing value framework adopted from Lavine (2014).

The competing value framework offers significant implications for ambidextrous innovation. In contrast to ambidexterity, the competing value framework is paradoxical in terms of flexibility, stability, and internal and external focus (Lavine 2014). Thus, it can be argued that the competing value framework offers implications that enable managers to manage the inherent paradox of exploration and exploitation innovation (Zeb et al. 2021). Organizations may approach innovation more nuancedly by adopting the framework's emphasis on striking a balance between opposing goals, such as internal and external focus, flexibility, and stability. The focus on stability and internal orientation may be addressed through exploitation innovation, while external orientation and flexibility can be addressed through exploration (Lavine 2014; Zeb et al. 2021). Thus, it can be concluded that the competing value framework is one of the key frameworks that can be used to employ culture as a key tool to manage the paradoxes of ambidextrous innovation.

d. Deal and Kennedy's Cultural Model

Deal and Kennedy's Cultural model is attributed to Terry Deal and Allan Kennedy. This model postulates that an organization's success or failure depends on its culture. Organizations can succeed if their culture is strong and cohesive. However, an incohesive culture will hinder their capacity to adapt to the changing external environment (Deal and Kennedy 1982). This model identifies four types of organizational culture based on the degree of risk and speed of feedback that a culture is able to take and adopt, as shown in Figure 2. This model offers a comprehensive implication for ambidextrous innovation (Deal and Kennedy 1982). This model postulates that an organization can reduce its chances of failure by taking risks while engaging in explorative innovation and at the same time taking effective feedback from the external environment through exploitative innovation activities. Thus, it can help to reduce uncertainty and secure success over a long period of time (Deal and Kennedy 1982).

Figure 2. Types of culture according to Deal and Kennedy (1982) adopted from Mcgrath and Bates (2017).

e. Cultural Web

The cultural web is also an influential theoretical model used to construct and define organizational culture. The cultural web model postulates that the culture of an organization is essentially and inherently complex and composed of various interrelated elements (Johnson and Scholes 1993). The interrelated cultural elements can be better understood as things such as stories, symbols, rituals, organizational structure, power structure, and paradigms which are all about the vision and mission of organizations (Johnson and Scholes 1993). Figure 3 shows the key elements of organizational culture according to the cultural web model (Johnson and Scholes 1993). There may be overlaps between these components. Control systems, on which power structures may rely, have the potential to take advantage of rituals that produce tales that may or may not be real (McDonald and Foster 2013). The cultural web may not offer a direct implication for the implementation of ambidextrous innovation, but it certainly offers some guidance with regard to boundary definitions and as far as power and organizational structure are concerned and the development of the needs of ambidexterity to be incorporated into paradigms. It is argued that once the need for ambidexterity is incorporated into paradigms, a proper power and organizational structure can be created to achieve this objective for the organization.

f. Spiral Dynamics

Spiral Dynamics is one of the key theories which explains the development of individuals, organizations, and societies. The basic premise of Spiral Dynamics theory postulates that culture plays a key role in the evolution and development of individuals, organizations, and societies (Beck and Cowan 2014). This theory further explains that culture, which consists of values, norms, and belief systems, tends to help organizations transition toward change in a cyclic manner (Khorev et al. 2015). Spiral Dynamics has significant implications for ambidextrous innovation. As Spiral Dynamics calls for adopting values, norms, and customs that help firms best incorporate change and evolution into the next stage, values consistent with ambidextrous innovation, such as open discussion, risk-taking, and the spirit of experimentation, can be significantly impactful in helping organizations evolve successfully (Tapsell and Woods 2008). The resulting products and services from explorative innovation and the maintenance of the competitiveness of existing products and services can impact the development of values, norms, and customs that can change the organization and its culture (Anderson et al. 2014).

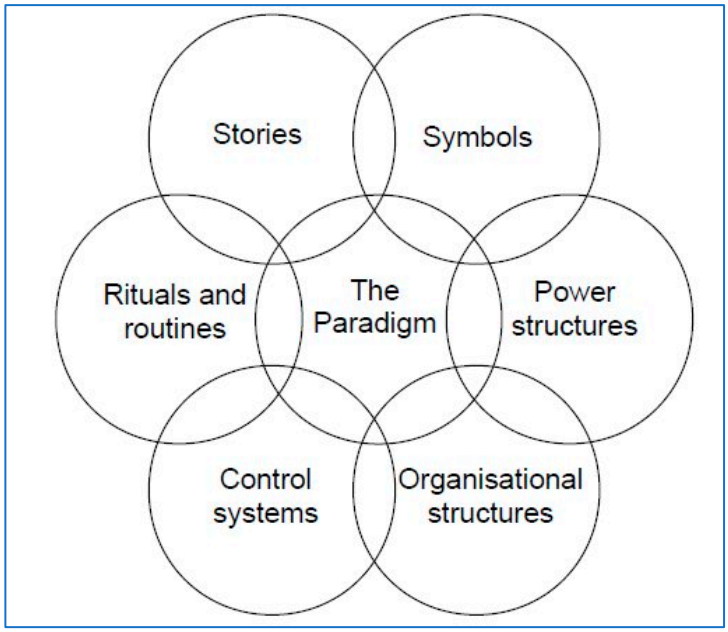

Figure 3. Culture web adopted from Johnson and Scholes (1993).

2.2.1. Importance of Organizational Culture

The collective values, beliefs, practices, and behaviors that make up an organization's culture provide the foundation around which employees communicate and make decisions (Rostain 2021; Schein 2010; Sackmann 1991, 2021). Organizational culture has a fundamental impact on the way resources are used and how well the firm can adapt to new opportunities and challenges. Organizational culture's ability to shape the internal environment that fosters innovation is one of the main factors contributing to its enormous effect. Even though financial resources, skills, and technology are essential for innovation, these resources may not automatically produce an innovative organization (Jo Hatch and Schultz 1997; Büschgens et al. 2013; Chandler et al. 2000). Thus, culture has a comprehensive impact on how resources are utilized efficiently.

Furthermore, because organizational culture is firmly ingrained in the organization and permeates all elements of its operations, its influence on innovation is more significant and long-lasting than that of resources or scale (AlSaied and Alkhoraif 2024). Size and resources can provide an organization with a short-term competitive edge, but over time, the organization may find it difficult to maintain innovation if its culture does not support ongoing learning, adaptation, and resilience. According to Schein (2010), an organization's culture has the greatest impact on its capacity for innovation because it fosters employee dedication to the company's objectives and core values. This collective dedication can spur creativity despite resource limitations and competitive pressures.

This perspective is supported by recent empirical research, which demonstrates that regardless of size or resource availability, companies with a strong innovation-oriented culture beat their competitors in terms of creativity, new product creation, and market success. In contrast to bigger resource-rich enterprises with a more conservative culture, organizations with a culture that emphasizes agility, openness, and a willingness to question the status quo are more likely to generate breakthrough ideas (Wang and Rafiq 2014). Additionally, small businesses with less funding but a strong innovation culture frequently show higher adaptability and quickness in reacting to market shifts, giving them an advantage over more established rivals (Khan and Mir 2019).

An innovative culture fosters a work atmosphere where people feel comfortable taking chances, expressing unusual ideas, and trying out new strategies. Because it lessens the fear of failure, which frequently stifles creativity, this psychological safety is essential for

innovation (Harmancioglu et al. 2020). Organizational culture also makes it easier for creative ideas to spread throughout the whole company.

In conclusion, organizational size and resources both play a significant role in fostering innovation, but they do not guarantee innovation results. Sustained innovation is more strongly and decisively influenced by culture, which shapes how resources are allocated, risks are handled, and how people cooperate and create. Regardless of their size or resource limitations, businesses can realize their full potential for innovation by fostering a culture that welcomes change, promotes experimentation, and values the contributions of every person.

2.2.2. Influence of Organization Culture on Innovation

Organizational culture has a significant influence on innovation and, more specifically, on ambidextrous innovation. Organizational culture shapes an atmosphere that either fosters or stifles creativity and new ideas, which has a significant impact on an organization's capacity for innovation (Büschgens et al. 2013). Innovation thrives in environments that value risk-taking, communication, and the free flow of ideas. Employees are more inclined to experiment and offer original solutions to the problems facing a company when they are given the freedom to consider new options without worrying about failure (Hogan and Coote 2014). In addition, cultures that prioritize inclusion and diversity tend to support a greater variety of viewpoints, which can produce more creative results (Khan and Mir 2019). This is because diverse teams combine a range of experiences and perspectives, both of which are necessary for coming up with innovative ideas. Businesses with these kinds of cultures are better able to update their goods regularly and adjust to shifting market conditions (Harmancioglu et al. 2020). In this regard, ambidextrous innovation can also be a result of a culture that values experimentation, swift communication, active collaboration, and cooperation and fosters a spirit of teamwork (AlSaied and Alkhoraif 2024).

3. Research Design

The aim of the present research is to understand the cultural inhibitors and enablers of ambidextrous innovation. To understand this, we employed a narrative review as the key research methodology. This type of review enabled us to delve into the key aspects of culture, exploring cultural enablers and inhibitors, if any, that can impact the implementation of ambidextrous innovation strategies. By using the narrative review method, we can integrate a variety of theoretical viewpoints and empirical evidence to pinpoint important cultural elements that could impact the effectiveness of ambidextrous innovation strategies. A narrative review's adaptability is crucial for capturing the many and contextually unique cultural factors that other approaches could miss (Wiles et al. 2011).

3.1. Literature Search Strategy

To undertake the current narrative review and analysis, a thorough search of the literature was undertaken using key databases, such as Google Scholar, SCOPUS, and Web of Science. Peer-reviewed journal articles, published in the English language between 2010 and 2024, were included. Key terms such as "Organizational culture", "ambidextrous innovation", "cultural enablers", "cultural inhibitors", and "innovation strategy" were used to search the literature using Boolean operators like AND and OR (Greenhalgh et al. 2018).

3.2. Selection Criteria

The present research developed predetermined inclusion and exclusion criteria. Research articles that explicitly discussed the relationship between ambidextrous innovation and organizational culture were included. Research articles that tended to discuss unrelated facets of innovation or did not discuss the organization culture as a key aspect in relation to innovation were excluded from this review. Following a preliminary screening of abstracts and titles and full-text reviews, we included 35 research articles in our narrative review.

3.3. Data Extraction and Synthesis

In order to review the articles included in the current narrative study, the present research attempted to extract key insights positioned on cultural inhibitors and enablers on ambidextrous innovation. To extract such insights, a comprehensive review of each paper's aims and objectives, theoretical frameworks, research methodologies, results of their data analysis, and conclusions was conducted. The present research then undertook a comprehensive qualitative analysis, in which the synthesis of key cultural inhibitors and enablers was conducted (Greenhalgh et al. 2018; Wiles et al. 2011).

4. Analysis of Literature: Findings

The present research has presented a comprehensive review of the literature with regard to various theoretical and conceptual understandings of culture in organizations (Büschgens et al. 2013; Herbig and Dunphy 1998). The present research from this analysis has discovered the three most important insights with regard to the importance of culture in organizations. First, drawing from the theories of social science and organizational psychology, the literature has informed us that the culture of an organization is a basic criterion for the existence of organizations (Rostain 2021; Sadegh Sharifirad and Ataei 2012). In line with such assertions, it is argued that the culture of an organization is established when the organization is formed, and it evolves over time (Zeb et al. 2021).

Second, since culture is established and evolves with the organization, it shapes the external and internal posture of the organization. The culture's components include the beliefs, norms, and customs of the organization, and these components form behavioral patterns through which the organization undertakes its operation, mission, and vision. Further, such patterns of behavior internally inform external stakeholders about the nature, size, and promises of the organization (Zhao and Gao 2024).

Thirdly, culture is said to be the key determinant of various consequences for the organization. The literature reviewed in the current research is consistent in asserting that organizational culture can help improve business performance, including financial and non-financial aspects (Zhang et al. 2022b). Further, it is also concluded that other key consequences, such as innovation, which is a key construct analyzed in the present literature, are found to be associated with culture (Wang and Rafiq 2014). The literature informs us that it is the culture of an organization that will bring innovativeness into the processes and products and services offered to customers (Tsai and Wang 2017). A culture which promotes and values discussions, experimentation, risk-taking, and motivation is likely to bring innovation into the organization (Limaj and Bernroider 2019). Thus, to achieve the necessary level of innovation for an organization to compete, certain key dimensions have to be focused on (Sackmann 2021).

4.1. Cultural Dimension of Innovation

The present research, by analyzing the current literature, has found key cultural dimensions of innovation. The literature has argued that the presence and absence of these dimensions which incorporate a pattern of behavior will impact innovation. These dimensions are presented in the following sections.

i. Risk-Taking and Experimentation

The literature has suggested that risk-taking and experimentation are key cultural dimensions of innovation. Risk-taking and experimentation pertain to the idea that the members of an organization are in the constant practice of seeking knowledge and developing new ideas. Further, these ideas are translated into actual practices which may entail the development of products and services. Finally, the organization takes risks, such as reputational and other risks, to launch such ideas into the market to see the reaction of consumers and other stakeholders (Büschgens et al. 2013; Wang and Rafiq 2014; Tsai and Wang 2017). It is argued that these behavioral patterns of an organization, embedded in its culture, tend to result in a continuous and never-ending cycle of innovation.

ii. Openness and Collaboration

Innovation does not only depend on seeking new ideas and converting them into actual products and services. An important role is played in sharing such ideas with other members of the organization, discussing an idea from the standpoint of constructive criticism, and fine-tuning an original idea into a meaningful and impactful idea. Such behavior depends upon the values of openness and active collaboration within the organization. Openness and collaboration are key elements of a culture that will ensure that new ideas are discussed, encouraged, and assessed critically. Thus, it will yield innovations in products and services that are liked by consumers and others (Büschgens et al. 2013; Zhang et al. 2022a; Rujirawanich et al. 2011).

iii. Empowerment and Autonomy

Openness, collaboration, and risk-taking also depend on the empowerment and autonomy of the members of an organization. Empowerment and autonomy create behavioral patterns in which the members of the organization are free and motivated to discuss, study, and develop ideas that are best suited for new innovative products and services. Empowerment and autonomy also create a sense of responsibility among the members of the organization to continuously seek new ideas through explorative innovation and attempt to improve existing products and services, referred to as exploitative innovation (Jo Hatch and Schultz 1997; Martins and Terblanche 2003; Sackmann 2021).

iv. Continuous Learning

Any innovation will depend upon the novelty of an idea. However, the novelty of an idea is dependent upon any new knowledge which can be accessed and shared. Thus, the behavior of continuous learning from both internal and external sources can bring new knowledge and novelty into innovative ideas. The literature has confirmed that continuous learning and knowledge seeking are the culture traits of an organization. Members tend to learn new things without any external push from management. Members tend to engage in learning as the knowledge received from learning will help them to develop novel ideas which can be discussed, experimented with, and launched into full-fledged products and services (Wang and Rafiq 2014; Tsai and Wang 2017; Limaj and Bernroider 2019).

v. Adaptation Customer Centricity

Finally, an important cultural element discussed and derived from the literature pertains to the consumer-centric approach. The consumer-centric approach refers to the idea that consumer needs, preferences, and demands are discussed and taken into account in everything that organizations undertake. Consumer centricity is a default behavior where members are aware and sensitive to the consumer. Consumer centricity plays an important role in the innovativeness of products and services. It enables the members of an organization to always seek new ideas that best satisfy consumer demands, needs, and preferences. Further, consumer centricity can be a source of new ideas as the members of an organization track consumer needs and preferences and develop key ideas which can be translated into the products and services needed by consumers (Herbig and Dunphy 1998; Rostain 2021; Zhang et al. 2022b).

4.2. Ambidextrous Innovation Culture

Since it has been established that organizational culture is an important predictor of innovation, the present research also delved into the intersection of culture and ambidextrous innovation to discover the relationship between organizational culture and ambidextrous innovation. Interestingly, it was found that organizational culture has a significant impact on ambidextrous innovation. The present research found that ambidexterity can be better implemented with a supportive organizational culture. More specifically, it was found that an organization's culture that tends to support its members in risk-taking, empowering them to seek knowledge, and fostering collaboration is likely to take greater initiatives towards both exploration and exploitation.

Further, important issues with reference to ambidextrous innovation are both boundary definition and priority toward explorative and exploitative innovation. It has been argued that one of the key hurdles in the implementation of ambidextrous innovation is balancing the explorative and exploitative paradox. The problems faced include team definition and boundary specification. Practically, it becomes difficult for an organization to have dedicated teams focusing on either exploration or exploitation while both teams actively collaborate with each other without any issues arising from the perceived prioritization of one against the other. An organizational culture that promotes wider integration and supports openness and active collaboration can easily solve such problems of boundary definition and team integration. A key cultural element of team and organization integration will play an important role in successfully and effectively handling boundary issues that often arise in balancing exploration and exploitation.

a. Culture and Innovation Paradox

An important focus has been placed on exploring culture with regard to the innovation paradox. A key element attempts to understand the creation and presence of the innovation paradox vis-à-vis culture. It has been found that culture can promote or demote the existence of a paradox. For example, a culture defined by strict rules, authority, and hierarchy may not allow any sort of paradox to exist, whether it be innovation or others. Focusing specifically on ambidextrous innovation, the present research supports the notion that only a culture defined by certain key elements can help allow the innovation paradox to exist. Further, it is also concluded that such a culture always supports innovation and is defined by key traits such as empowerment, team integration, risk-taking, and experimentation.

b. Culture balancing paradox

The present research is also interested in exploring insights from culture regarding the role of culture in balancing the innovation paradox. It is argued that an innovative culture, which contains certain characteristics defined in Section 3.1, has the ability to balance the innovation paradox. Innovative culture helps teams develop a common and shared vision toward innovation. It helps teams realize the importance of both explorative innovation from a longer-term perspective and maintaining the status quo from a short-term perspective. Further, a culture that helps teams develop a shared vision of innovation from both longer- and shorter-term perspectives will enable them to navigate the landscape of priorities and execution. Thus, it will help teams effectively balance the paradox of innovation, i.e., explorative and exploitative innovation.

4.3. Cultural Enablers

The present research also undertook a brief analysis of key cultural variables which can foster the implementation of ambidexterity in an organization. The literature analysis suggested that certain key organizational enablers can have an impact on the implementation of ambidextrous innovation in an organization. The results as presented in Table 2, include organizational capacity, knowledge management, openness and support of management, leadership development, agility, team management, and digital transformation. Organizational capacity refers to the availability of skills, resources, and infrastructure to test new ideas for exploration and exploitation. It also includes an organization's capacity for tolerance and empowerment which helps members seek fresh ideas, question the status quo, and bring about radical change (Lièvre 2019).

Secondly, knowledge management is an important cultural factor. An organization that always seeks new knowledge and engages in the process of knowledge sharing is likely to develop new and novel ideas, as knowledge is a key factor in fostering both explorative and exploitative innovation (Alshawabkeh et al. 2020; Chmielarz 2023). Further, leadership (Haider et al. 2023; Binci et al. 2023) and top management support (McCarthy et al. 2019) are said to be key facilitating factors in ambidextrous innovation. The vision and mission regarding ambidexterity within an organization arise from effective and successful leadership. Thus, to achieve such a vision, support from top management is

highly necessary to realize the goals and objectives of ambidextrous innovation (Haider et al. 2023; Binci et al. 2023; McCarthy et al. 2019).

Table 2. The key cultural enablers.

Enablers	References
Organizational capacity	Lièvre (2019)
Knowledge management	Alshawabkeh et al. (2020); Chmielarz (2023)
Management openness and support	McCarthy et al. (2019)
Leadership development	Haider et al. (2023); Havermans et al. (2015); Binci et al. (2023); Nunes and Abreu (2020)
Agility	Fortuna et al. (2023); Skyttermoen and Wedum (2023); Dreesen and Hansen (2018); Lindskog (2022)
Team management	Zhang et al. (2022a); Zhang et al. (2021b); Lee et al. (2009)
Digital transformation	Oleksandr et al. (2020)
Design thinking	Randhawa et al. (2021a); Cai et al. (2023)
Employee empowerment	Caniëls et al. (2017); van Assen (2020)
Training and development	Kim (2019); Birkinshaw and Gibson (2004)
Lean management and philosophy	Fang et al. (2021); Alcaide-Muñoz and Gutierrez-Gutierrez (2017)
Goals and objective alignment	Kortmann (2015); Sahi et al. (2020)
Strategic alignment	Kortmann (2015); Sahi et al. (2020)

The key objective for implementing ambidexterity is building an effective response to the changing market landscape. Therefore, ambidexterity will help an organization become agile. However, given the speed and complexity of innovation, existing agility is needed. Agility will help an organization undertake the necessary changes required by changing environmental circumstances. Thus, agility as a cultural element is a key enabler for organizations to implement ambidextrous innovation (Fortuna et al. 2023; Skyttermoen and Wedum 2023; Dreesen and Hansen 2018; Lindskog 2022).

Team management is said to be an important factor in ambidextrous innovation, especially from the perspective of balancing exploration and exploitation. Key factors such as team integration, cohesion, and empowerment bring about key outcomes, including not only fresh ideas but also insights shared cross-functionally (explorative and exploitative) that benefit each other (Zhang et al. 2021b; Lee et al. 2009). Finally, an important role is played by digital transformation. Digital transformation is a key element in innovation in general and ambidexterity in particular. Digitalization facilitates ambidextrous innovation by empowering teams with new knowledge and tools, enabling collaboration, and making it easy to experiment with and balance explorative and exploitative ideas.

Apart from these dominant factors, the present research also extracted from the literature other key ideas and variables which can have a positive impact on ambidextrous innovation and the balance of exploration and exploitation. These include design thinking (Randhawa et al. 2021a; Cai et al. 2023), employee empowerment (Caniëls et al. 2017; van Assen 2020), training and development (Kim 2019; Birkinshaw and Gibson 2004), lean management and philosophy (Fang et al. 2021; Alcaide-Muñoz and Gutierrez-Gutierrez 2017), and strategic focus (Kortmann 2015; Sahi et al. 2020).

According to Randhawa et al. (2021a), design thinking promotes a culture of creativity and user-centered innovation, which aids businesses in successfully striking a balance between exploration and exploitation (Cai et al. 2023). Employee empowerment supports ambidextrous innovation by enhancing both radical and incremental innovation capacities through decision-making and autonomy (Caniëls et al. 2017; van Assen 2020). Employees with a variety of abilities and knowledge are better able to move between exploratory

and exploitative activities with ease thanks to training and development programs (Kim 2019; Birkinshaw and Gibson 2004). Aligning organizational processes to enable dual innovation activities is possible thanks to lean management and philosophy, which emphasize efficiency and continuous improvement (Fang et al. 2021; Alcaide-Muñoz and Gutierrez-Gutierrez 2017). An ambidextrous approach to innovation is fostered by strategic focus and alignment with ambidexterity, which ensure that organizational resources and activities are oriented towards long-term goals while maintaining flexibility to respond to new opportunities (Kortmann 2015; Sahi et al. 2020).

4.4. Cultural Inhibitors

As shown in Table 3, The present research also undertook a brief analysis of key cultural variables which hinder the implementation of ambidextrous innovation. The literature analysis suggests that organizational structure, less strategic focus, stakeholder pressure, manager experience with ambidexterity, and poor communication and feedback loop are key elements which can inhibit the implementation of ambidexterity in an organization. An organizational structure which is less flexible will always inhibit the injection of fresh ideas into the organization (Andrade et al. 2023; Suharto 2023). Therefore, to avoid this, it is argued that a lean and agile structure is suitable for ambidextrous innovation (Suharto 2023).

Table 3. Key inhibitors.

Factors	References
Organization structure	Andrade et al. (2023); Suharto (2023)
Less strategic focus	Andrade et al. (2023); Suzuki (2019)
Shareholder expectation	Andrade et al. (2023)
Customer pressure	Bandeira-de-Mello et al. (2016)
Manager experience and ambidexterity	Mom et al. (2015)
Poor communication and feedback loop	Mathe (2017)
Complacency	Senaratne and Wang (2018); Blumentritt (2004)
Lack of skills and expertise	Mom et al. (2015); Senaratne and Wang (2018)
Organizational structural constrains	Khan and Mir (2019)
Resource constrains	Heirati et al. (2017)

Secondly, ambidextrous innovation, especially exploration and its balance with exploitation, needs a strategic mindset and vision within the organization (Suzuki 2019). Thus, an organization lacking such a mindset and vision will not be able to implement ambidexterity effectively (Du and Chen 2018). Further, similar to the vision, stakeholder pressure, especially investors' or shareholders' expectations, is a key hindrance to ambidextrous innovation (Andrade et al. 2023). The lack of vision from investors and their higher risk aversion may force the organization not to seek the path of ambidexterity and thus inhibit the process of ambidextrous innovation. Ambidexterity, which requires a longer-run approach to idea acquisition and testing, can also be hampered by recurring demands from consumers. This may stimulate exploitative activities, but explorative activities might not be expedited. Thus, this will lead to a lack of balance and resulting hindrance to ambidexterity in organizational innovation (Bandeira-de-Mello et al. 2016). The implementation of ambidextrous innovation also requires managers' experience and their own ambidexterity (Mom et al. 2015). Ambidextrous innovation will be inhibited by managers who do not possess the required knowledge, skills, and experience with ambidexterity (Mom et al. 2015). Finally, an organization with a higher feedback and communication loop will find it very difficult to implement ambidexterity. Apart from these dominant inhibitors, the present research also attempted to explore other possible inhibitors with

potential negative impacts on ambidextrous innovation. The results of the present research suggest that factors such as complacency (Senaratne and Wang 2018; Blumentritt 2004), a lack of skills and expertise (Mom et al. 2015; Senaratne and Wang 2018), and organizational constraints (Khan and Mir 2019) can also have a negative effect on ambidextrous innovation. Innovation is hampered by managers' and workers' complacency, which saps their will to seek out fresh opportunities and advancements (Senaratne and Wang 2018; Blumentritt 2004). Innovation processes are slowed down when personnel lack the knowledge and experience necessary to manage the demands of both exploration and exploitation (Mom et al. 2015; Senaratne and Wang 2018). The balance between exploratory and exploitative innovation is severely impacted by organizational constraints, such as scarce resources and a rigid organizational structure, which limit the capacity to experiment and adapt (Khan and Mir 2019; Heirati et al. 2017).

5. Conceptual Framework

Organizational culture seems to be a key and important factor in the implementation of ambidextrous innovation. The very aspect of balancing exploration and exploitation innovation needs a culture that values idea sharing and a risk-taking spirit. The literature suggests that the organizational culture model of the competing value framework (CVF) (Quinn and Rohrbaugh 1983) can best be utilized for conceptualizing and implementing ambidexterity within the organization. Duncan (1976) first argued that for an organization to implement ambidextrous innovation, it needs the capability to exploit market opportunities. Duncan (1976) especially focused on key elements such as an organizational structure that is market-oriented and flexible enough to experiment with new ideas. Utilizing Duncan's assertions (Duncan 1976), the competing value framework is the most suitable organizational culture model as it pertains to a focus on the market and proposes a flexible market structure in terms of external positioning and stability. Recent empirical research by Wang and Rafiq (2014) also argued that a competing model based on organizational diversity, which requires a flexible organization structure and shared vision focused on the market in the competing value framework, is the most suitable culture for implementing ambidextrous innovation.

However, explaining and understanding complex organizational mechanisms through the CVF may fall short. Although the CVF provides valuable insights into the culture of various but competing values, the specification of the key components of each value is highly desirable. A detailed specification of each key aspect of the values enshrined in the CVF is needed for a better implementation and operationalization of such values in various organizational and situational contexts. While a good amount of detail is provided in the CVF, more of the literature is still needed to better illustrate, define, and explicate the CVF.

Schein's model of organizational culture is unique and influential in defining and explicating organizational culture. This model uniquely and theoretically conceptualizes organizational culture in terms of three influential elements: artifacts, espoused values, and underlying assumptions. The present research, in its conceptualization of organizational culture with regard to ambidextrous innovation, proposes that the values of organizational culture enshrined in the CVF can be better conceptualized and described by illustrating each value's artifacts, espoused values, and underlying assumptions. Explaining each value's artifacts, espoused values, and underlying assumptions will further specify and clarify the understanding of the CVF as a general model and of each value. Thus, such specification and explication can also be helpful for organizations to choose the values from the CVF model and model their culture accordingly. Figure 4 shows the amalgamation of the CVF and Schein models for organizational culture. Thus, it can be argued that Schein's model of organizational culture can help enrich the proposition of the CVF model in implementing ambidexterity.

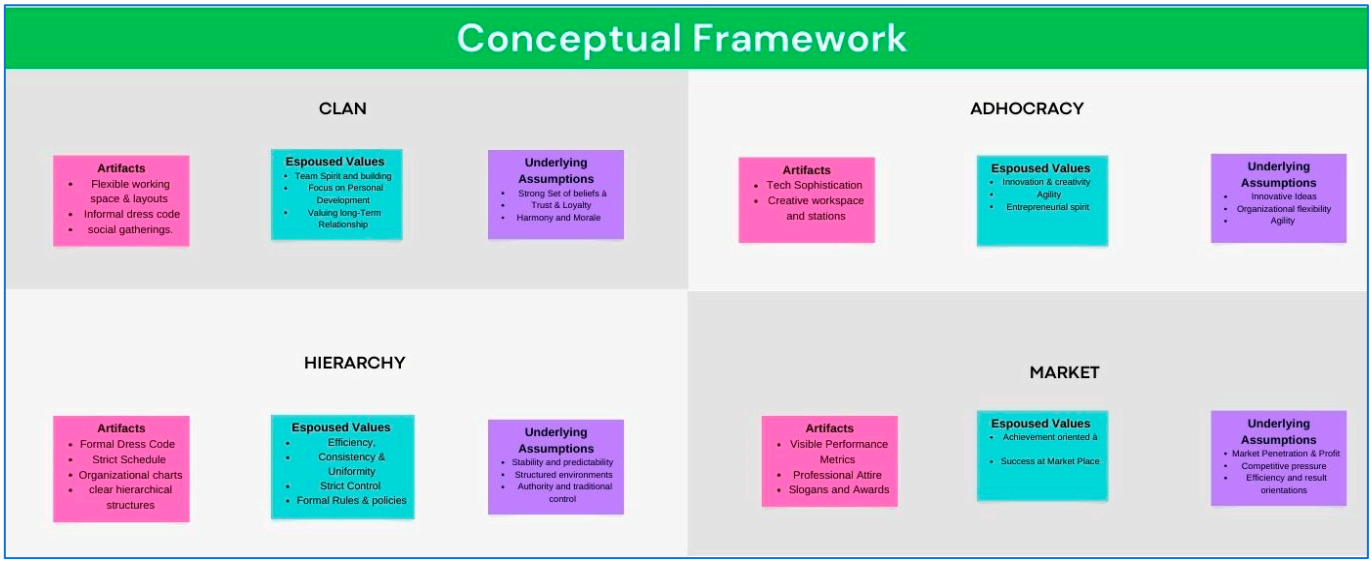

Figure 4. Conceptual framework.

Drawing insights and inferences from the literature, the CVF consists of different types of organizational cultural values which include clan, adhocracy, market, and hierarchy. The present research attempted to define each value by highlighting artifacts, espoused values, and underlying assumptions. The present research proposed that "Clan" culture is a kind of culture that comprehensively focuses on flexibility, team spirit, and long-term relationships. The key artifacts of clan culture include flexible working spaces and layouts, informal dress codes, and recurring social gatherings. Clan culture focuses on the key values of team spirit and building, a focus on personal development, and valuing long-term relationships. Secondly, the present research conceptualized "adhocracy" as a set of cultural values that promotes innovation, agility, and an entrepreneurial spirit. The key cultural artifacts can be described as technological sophistication and creative workspaces and stations. The key values espoused in adhocracy culture include innovation and creativity, agility, and an entrepreneurial spirit. Thirdly, the CVF includes the "hierarchy" culture, which emphasizes competitiveness, achievement, and market presence. The key cultural artifacts include formal dress codes, strict schedules, and defined organizational charts and hierarchical structures. The key values include efficiency, consistency, and uniformity with strict control, rules, and policies. Finally, "market" culture focuses on key cultural artifacts such as visible performance metrics and professional attire. The key values in market culture include achievement orientation and success in the marketplace.

6. Conclusions

Ambidextrous innovation is recognized as a key innovation tool and framework for modern organizations to undertake innovation, enhance organizational performance, and compete in the market effectively. Ambidextrous innovation is also recognized at the project level as a key tool to enhance performance, cost, and time efficiency, which satisfy stakeholder demands. However, the implementation of ambidextrous innovation, which includes the key paradox of balancing between exploratory and exploitative innovation, is a key problem that has to be addressed at both the project and organizational levels. A potential strategy to implement ambidexterity as a key innovation framework and balance exploratory and exploitative innovations is organizational culture, as our survey of the literature suggests. Culture seems to be one key area that can provide the skills, attitude, and behavior sets necessary for exploration, exploitation, and balancing this paradox effectively at the organizational level.

A number of important empirical studies have also been undertaken to test the impact of culture on ambidextrous innovation. These studies have provided important insights and

extended the literature for better understanding and managerial implications. However, the conceptualization of culture as a way forward for undertaking exploration, exploitation, and balancing the paradox is greatly missing from the literature. Thus, to fill this important gap, the present research has undertaken a comprehensive review of the existing literature on the intersection of ambidextrous innovation and organizational culture with the aim to first conceptualize culture theoretically with reference to ambidextrous innovation and understand the key cultural factors such as inhibitors and enablers impacting the balancing of the exploration and exploitation paradox.

The present research, drawing from key theoretical models that explicate culture, also attempted to build theoretical insights that can better guide managers in implementing ambidexterity in their organizations. The present research, based upon the review of the literature, proposed that the competing value framework amalgamated with the Schein model of organizational culture can provide a theoretical explanation to help organizations implement ambidextrous innovation. The Schein model enriches the competing value framework. The Schein model provides comprehensive guidelines on the competing value framework, suggesting that organizational culture can be developed to be flexible, market- and agility-oriented, and value the entrepreneurial spirit. Thus, an organizational culture conceptualized as an amalgamation of both the Schein and CVF models will help organizations seek new knowledge and novel ideas and experiment with these ideas. Such strategies will help implement ambidextrous innovation within the organization. However, more comprehensive research is still needed to use such theories and models as anchor points to develop a robust theoretical framework explaining key cultural inhibitors and enablers for ambidextrous innovation.

The present research aimed to explore the key cultural inhibitors and enablers of ambidextrous innovation. The inhibitors, as our survey of the literature suggests, include less strategic focus, shareholder expectation, customer pressure, manager experience, poor communication, feedback loop, complacency, lack of skills and expertise, organizational structural constraints, and resource constraints. Conversely, cultural enablers promoting ambidextrous innovation include organizational capacity, knowledge management, leadership development, management openness and support, agility, team management, digital transformation, design thinking, employee empowerment, training and development, lean management and philosophy, goals and objective alignment, and strategic alignment. The present research extended the existing literature by comprehensively identifying such inhibitors and enablers that can guide both managers and academicians in understanding the implementation of ambidextrous innovation.

6.1. Managerial Implications

The present research offered four different managerial implications for organizations working toward ambidextrous innovation. First, the present research comprehensively discovered the role of culture. Culture is an important factor in enabling innovation and ambidexterity. A culture that promotes collaboration, team spirit, and cooperation is suitable for ambidextrous innovation. Secondly, the current study proposed that developing a culture capable of enabling ambidextrous innovation requires integrating two key theoretical models, including the Schein model and competing value framework. Third, this study provided comprehensive guidelines for managers with regard to the balancing of the paradox of exploratory and exploitive innovation. This research argued that both exploratory and exploitative innovation are not only necessary but also inherent as both complement each other. Finally, our study proposed comprehensive cultural guidelines that managers can draw upon to implement strategies for fostering culture and ambidextrous innovation.

6.2. Limitations

This research also reports certain key limitations that need to be rectified in future research. First, the conclusion of the current research, especially the conceptual framework, is based on the review of the literature. However, to validate such an assertion, more

exploratory research by collecting data using a qualitative method is needed. Secondly, our framework is based on a generalized notion of organizational culture, discounting the effect of other factors, such as industry, size, and structure. Thus, future researchers can take into account such variability with regard to both culture and organizations.

Author Contributions: Conceptualization, M.A. and P.M.; methodology M.A. and P.M.; software, M.A. and P.M.; validation, M.A. and P.M.; formal analysis, M.A.; investigation, M.A.; resources, M.A. and P.M.; data curation, M.A. and P.M.; writing—original draft preparation, M.A. and P.M.; writing—review and editing, M.A. and P.M.; visualization M.A. and P.M supervision, M.A. and P.M.; project administration, M.A. and P.M.; funding acquisition, M.A. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are available on request from the corresponding author due to privacy reasons.

Conflicts of Interest: The authors declare no conflict of interest.

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Al Saied, Mohammad; McLaughlin, Patrick

2024-09-06
MDPI
https://doi.org/10.3390/admsci14090207
AlSaied M, McLaughlin P. (2024) Organizational culture enabler and inhibitor factors for ambidextrous innovation. Administrative Sciences, Volume 14, Issue 9, September 2024, Article number 207

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