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Full research paper

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Abstract

Artificial Intelligence (AI) can transform organisations, industries, and ecosystems if organisations explore the AI affordances. Likewise, researchers should investigate what AI affordances organisations perceive, actualise, and why - areas that are in dire need of conceptual and empirical research. The conceptual distinction between AI affordances perception and other AI related constructs should not be ignored. This research develops a contextualised conceptual framework to explain AI affordances perception of organisations within the mobility ecosystem. Drawing from the affordances and social cognitive theories, the study proposes two AI affordances perception constructs, that is, vicarious and autonomous AI affordances. It develops a nomological net of factors and suggests propositions how these factors might influence the two AI affordances perceptions. Our conceptual work offers a foundation for investigating AI affordances and developing other models related to AI affordances actualisation. Future research can test and validate the framework.

Keywords Artificial Intelligence, Affordances Perception, Social Cognitive Theory, Mobility Ecosystems, Smart Mobility.

1 Introduction

Artificial Intelligence (AI) refers to technologies and systems that interpret data, learn from data, and use the learning to perform cognitive functions, and other tasks generally associated with humans (Kaplan and Haenlein 2019). These include, but not limited to, visual perception, speech recognition, and problem solving. AI is expected to transform organisations, industries, and business ecosystems (Achmat and Brown 2019). For instance, AI applications automate repetitive and time-consuming manual work and offer insights from massive amounts of unstructured data that once required human analysis (Bawack et al. 2019). They create new forms of products, services, and business models, and change the dynamics of interactions among various business stakeholders (Achmat and Brown 2019). Gartner predicts that, by 2022, AI will generate $3.9 trillion of business value and will automate one fifth of workload in mostly nonroutine jobs (Pettey and Meulen 2018). Although AI has potentials to transform businesses, industries, and ecosystems, organisations that undertake AI initiatives are encountering several challenges in realising benefits. According to a worldwide executive research, 70% of firms report that their AI initiatives have not met expectations or have yet to offer a considerable return on investment (Ransbotham et al. 2019). Some of the reported challenges include limited strategic interpretation of AI abilities, lack of AI leadership, and confusion about how AI solutions could address specific organisational goals (Alsheibani et al. 2019; Jöhnk et al. 2021).

Information Systems (IS) research on AI explains the adoption and value of AI for singular business use cases in finance, marketing, and mobility industries (Abduljabbar et al. 2019; Davenport and Ronanki 2018; Ivanov and Webster 2017; Siering et al. 2018). Most of these studies suffer from technological determinism as they hardly consider the alignment of the potentials of AI with specific organisational goals and situations. This is a significant shortcoming as the same technology could present different effects in different application contexts (Anderson and Robey 2017). Although there are several studies investigating factors that influence AI adoption and readiness at the organisational level (Alsheibani et al. 2019; Holmstrom 2021; Jöhnk et al. 2021; Pumplun et al. 2019), the conceptual separation between AI affordances perception and other constructs is ignored. To overcome this, the affordance theory can be applied to conceptualise the action possibilities a technological artifact, such as AI, affords an actor through its material property (Markus and Silver 2008).

Affordances are defined as *"the possibility for goal-oriented actions afforded to specific user groups by technical objects"* (Markus and Silver 2008, p. 622). Thus defined, affordances are not a set of features inherent to the object and independent of the actor. Instead, affordances are the emergent property of an actor-object system. Analysing the affordances of a single technology is useful for getting rich insight on an emergent technology-in-use (Benbunan-Fich 2019). Thus IS research has examined the affordances of blockchain, big data, Internet of Things (IoT), and other digital technologies at the individual (Li et al. 2020; Steffen et al. 2019), organisational (Dremel et al. 2020; Du et al. 2019), and community levels (Tim et al. 2020; Vaast et al. 2017). A key insight derived from these studies is that for an affordance to be actualised, it should be perceived first (Bernhard et al. 2013; Pozzi et al. 2014). Nevertheless, there is no conceptual framework to facilitate an investigation of how organisations within an ecosystem perceive the action potentials afforded by AI in line with organisational and ecosystem goals. This study develops a conceptual framework to investigate AI affordances perception within the urban mobility ecosystem. The paper focuses on the urban mobility ecosystem because of the significant problems such as traffic congestion, inefficiency, accidents, and environmental sustainability that require transformative digital solutions (Zawieska and Pieriegud 2018). The urban mobility ecosystem is also relevant to the United Nations (UN) sustainable development goals. The research question that guides the study is: *What AI affordances do organisations in the mobility ecosystem perceive and why?*

The rest of the paper is structured as theoretical background, discussion of the AI affordances perception conceptual framework, and conclusion and future research direction.

2 Background

To provide background to the proposed conceptual framework, we review literature on smart mobility transformation, and affordances and social cognitive theories.

2.1 Mobility Transformation

Urban mobility is faced with significant traffic, inefficiency, accidents, high prices, and pollution that require changes (Hensher 2018; Lyons 2018). To address these issues, organisations in the mobility ecosystem are implementing smart mobility and intelligent transport technologies such as AI, big data, and IoT in their operations, products, and services (Abduljabbar et al. 2019; Davidsson et al. 2016). In addition, the changes in customer expectations from modal-centric mobility towards user-centric services motivate organisations to employ advanced digital technologies to accommodate customers' changing demands (Docherty et al. 2018). These implementations provide comprehensive insights how urban mobility resources and networks work (Garau et al. 2016); support operation management tasks such as demand planning (Bakibillah et al. 2021); and create effective and resource-efficient mobility systems (Ambrosino et al. 2015; Docherty et al. 2018). They offer real-time feedback to influence traveller behaviour (Amoretti et al. 2017; Choudhury et al. 2018) and optimise mobility system performance (Davidsson et al. 2016). Moreover, they help to transform mobility systems and services into smart and green mobility (Davidsson et al. 2016; Docherty et al. 2018; Zawieska and Pieriegud 2018).

Smart mobility transformation requires not only technological artefacts but also shared goals, commitments of mobility players to act, and new market dynamics (Docherty et al. 2018; Lyons 2018). Goals and commitments are reflected in national governments' sustainable mobility goals; regional initiatives such as the European Union White Paper on Transport (Kallas 2011) and the United Nations (UN) sustainable development goals. In terms of market, customers are increasingly demanding more convenient and intermodal journey (Amoretti et al. 2017) that can be personalised and customised to suit their preferences and real-time road conditions (Cohen and Jones 2020) instead of travelling in a predetermined pattern (Choudhury et al. 2018). New competitive dynamics that go beyond public sector construction of roads to how mobility resources should be distributed (Docherty et al. 2018) and the involvement and interdependence of various public and private transport providers (Davidsson et al. 2016) are also emerging.

Smart mobility transformation could result in new logics of consumption, changes in networks of actors and resources, shifts in business models (i.e., how mobility is regulated, priced, and taxed), and how public value can be captured (Docherty et al. 2018). First, private ownership is switching to shared usership (Docherty et al. 2018; Hensher 2018). Second, the traditional business model for public-private allocation of tasks (e.g., operating public transport and constructing transport infrastructure) across the mobility system is evolving towards the commoditisation of individual journeys (Docherty et al. 2018). Third, shifting from isolated mobility to intermodal and seamless mobility requires that the boundaries between different mobility modes are blurred. This means urban mobility is becoming a cooperative and interconnected ecosystem with multiple stakeholders collaborating in the creation of smart mobility solutions (Hietanen 2014).

Within the context of smart mobility transformation, how different mobility actors can take advantage of AI (Abduljabbar et al. 2019) and evaluate its action possibilities for achieving their organisational and ecosystem goals is a significant problem. With many other sectors investing in AI projects, it is critical for mobility organisations to review and investigate how AI can support their organisational missions (Abduljabbar et al. 2019). For instance, machine learning support autonomous driving (AD), at least for vehicle image recognition, where human programs cannot possibly process one gigabyte of data per second (Joshi 2019). Many mobility organisations are also exploring AI as a key enabling technology to master the transformation to customised, environmentally friendly, and autonomous mobility (Nikitas et al. 2020). New value pools are generated through AI-enabled applications, including optimised process and increased productivity, new/improved products and/or services, and new businesses with applications of new products (McKinsey 2017). Mobility operators are also exploiting AI to introduce new product (e.g., autonomous vehicles) and service (e.g., Mobility as a Service) categories. This is in line with Achmat and Brown (2019)'s arguments of AI's potential to enable or facilitate the transformation or creation of new business processes and even entirely new (vertical) businesses with the use of new AI-based products. Therefore, it is critical to explain the AI affordances perception of different actors and what might influence it. We next turn to the discission of the affordances theory and follow that with social cognitive theory.

2.2 Affordances Theory

The affordances theory originate in ecological psychology to explain the action possibilities an object affords a goal-oriented actor for achieving the goal (Gibson 1977). The IS literature appropriates the concept to capture the action potentials of technological objects (Markus and Silver 2008). Technology affordances refer to *"the possibility for goal-oriented actions afforded to specific user groups by technical objects"* (Markus and Silver 2008, p. 622). This underscores the relational characteristics of affordances. Technology affordances not only focus on technological features but also consider how actors perceive and interact with the technology. Hence, the actor and the object cannot be investigated separately, and an actor is always required as a frame of reference to investigate affordances (Markus and Silver 2008). Although the affordances theory focuses on individual actors (Lehrig et al. 2019), research has also applied the theory to organisational (Dremel et al. 2020; Du et al. 2019), and community levels (Tim et al. 2020; Vaast et al. 2017). The affordances theory is a useful theoretical lens to understand the socio-technical actions in the AI context. Adopting this perspective is important for examining how *"expertise, organisational processes and procedures, controls, boundary-spanning approaches, and other social capacities present in the organisation"* (Zammuto et al. 2007, p. 752) interact with features of AI. It also allows to unravel how this interaction influences the use of AI (Volkoff and Strong 2018).

Several studies offer broad guidance for IS affordance identification. Chatterjee et al. (2015) identify three essential organisational IS affordances – organisational memory, collaboration, and process management affordance – that enable organisational virtues, capabilities, and innovation. Organisational memory affordance is the *"IS-facilitated ability to create, store, transform, refine, access, mobilise, apply, and exploit organisational knowledge" (*Chatterjee et al. 2015, p. 165). While collaborative affordance is the *"IS-facilitated ability to instil cooperation within an organisation, …* [process management affordance is] the *IS-facilitated ability to design, visualise, prioritise, and monitor work processes, as well as allocate and manage appropriate resources to enable action and decision"* (Chatterjee et al. 2015, p. 165). In their later study, Chatterjee et al. (2020) investigate the dependencies between the three affordances and co-align the subordinate affordances into a higher-order superordinate IS affordance salient to innovation. Through a case study about the implementation of environmentally sustainable business practices, Seidel et al. (2013) identify four functional IS affordances required in environmental sustainability transformations, which include reflective disclosure, information democratisation, output management, and delocalisation. The four functional affordances originate in IS and generate an actionable context where organisations could engage in sensemaking and sustainable practices (Seidel et al. 2013). Hanelt et al. (2017) add two functional affordances of Green IS containing technological flexibility and digital eco-innovation. These works offer insights that AI affordances should be identified according to the material properties, that is the technological features of AI and specific use contexts.

While the IS affordances literature focuses on the affordances-actualisation processes, affordances perception is a primary prerequisite for affordances actualisation to take place (Bernhard et al. 2013; Lehrig et al. 2019). Bernhard et al. (2013) argue *"even though psychology researchers have highlighted the role of a user's affordance perception before being able to act on it, this conceptual separation has largely been ignored in existing studies in IS"*. Affordances-perception refer to the processes where affordances are perceived or recognised by actors to exploit action potentials (Bernhard et al. 2013). Therefore, the discussions about affordances actualisation and its subsequent effect remain incomplete if they do not first comprise the factors that lead to affordances perception (Lehrig et al. 2019). Bernhard et al. (2013) argue that affordances perception depends on the information (properties of the object and external) available to the actor. The affordances of any object could not be entirely and immediately ready for perception. The goal-oriented actors with certain capabilities perceive the affordances as a potential to perform an action (Pozzi et al. 2014). Lehrig et al. (2019) identify that affordances perception relies on self-efficacy. These arguments on affordances-perception highlight the relevance of the social cognitive theory (SCT) which will be introduced in the next section.

2.3 Social Cognitive Theory

SCT emphasises cognitive, vicarious, self-regulatory, and self-reflective processes as determinants of human behaviour (Bandura 1986). Cognitive implies that behaviour could be explained by knowledge structures that enable people to perform a specific behaviour but also by the belief that specific behaviour will lead to outcomes (Bandura 1986). Vicarious indicates that humans learn to a large extent by observing others' behaviours and their consequences (Bandura 1986). Self-regulatory means that humans pursue goals, foresee the possible consequences of behaviours, and, on this basis, choose deliberate actions regarding what challenges to undertake, how much effort to spend, and how long to persist (Bandura 1986). Self-reflective implies that humans update their beliefs and goals in accordance with the outcomes of prior behaviours (Lehrig et al. 2019). The SCT forms a comprehensive framework for explaining certain human behaviour such as IT use behaviours (Benlian 2015; Schmitz et al. 2016).

The SCT provides two insights that are particularly important for theorising organisations' AI affordances perceptions. First, it draws attention to the likely outcomes that organisations anticipate when they engage in AI-related projects, collaborations, and knowledge exchanges. For instance, if an organisation believes that it is unlikely to benefit from AI, it is unlikely to expend substantial efforts on exploring AI (Keller et al. 2019). Second, the SCT offers the self-efficacy concept, which is generally defined as *"the belief of being able to successfully perform a particular action"* (Bandura 1986, p. 391). People form their self-efficacy beliefs based on at least three sources (Bandura 1986): (a) performance accomplishments, that is, own past performances of an activity and outcomes, (b) modelling the performances of the activity by others and their outcomes, and (c) persuasion (i.e., attempts to convince a person that the person could perform an activity). These concepts can be translated to the context of organisational AI use and imply that organisations could perceive AI affordances not only from their historical IT implementations but also vicariously by observing how other organisations in the mobility ecosystem use AI. It also implies that mobility ecosystem AI-related actions can trigger organisational AI absorptive capacity and the AI affordances-perception-actualisation processes.

3 Conceptual Framework and Propositions Development

The dependent variable of interest is AI Affordances Perception. Perceiving AI affordances depends on the relationship between AI and the organisation and the ecosystems in which AI is to be used (Volkoff and Strong 2018). To investigate AI affordances perception, what AI functional affordances for mobility exist should be first identified. One example of AI affordances in mobility, as mentioned in section 2.1, could be personalising mobility services based on customers' travel history, preference and real-time traffic data. Functional affordances emerge when the material properties of technologies are interpreted by a specific user as affording action possibilities within the context of their use (Markus and Silver 2008). Lehrig et al. (2019) identify that affordances perception relies on self-efficacy (i.e., the extent to which an organisational actor believes to be able to use IT). Li et al. (2020) also suggest that affordances perception entails organisational capabilities to complement contextual affordances situations.

Based on Lehrig et al. (2019)'s work, AI affordances perception is categorised into two: vicarious and autonomous. These two perceptions differ in the nature of the activities leading to perception and in information requirements (Lehrig et al. 2019). Vicarious affordances perception is based on the serendipitous discovery that relies on information from social/media sources and requires a low level of readiness due to its serendipitous nature. On the other hand, autonomous AI affordances perception is based on deliberate discovery. It relies on information from trusted sources and knowledge bases and requires high readiness due to the uncertain nature of deliberate activities.

This study conceptualises that mobility ecosystem organisations form two AI affordances perceptions. The first is autonomous AI affordances perception for mobility and the second is vicarious AI affordances perception for mobility. While autonomous AI affordances perception could be influenced by vicarious AI affordances perception, AI readiness, and AI absorptive capacity, vicarious AI affordances perception is influenced by mobility ecosystem AI-related actors' actions. This theorisation is in line with Gibson (1977)'s argument that affordances perception requires information available to the actor. It is also consistent with the SCT that identifies how one's ability to do something is influenced by internal past actions and external modelling and persuasion (Bandura 1986). Figure 1 reflects this theorisation, and the main factors are defined in Table 1, which is followed by propositions development.

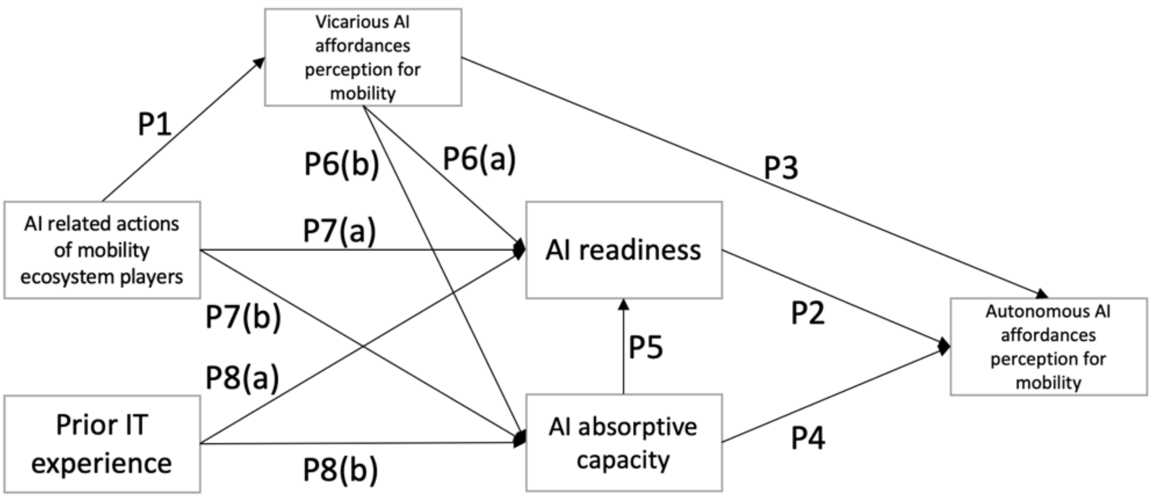

Figure 1: AI Affordances Perception Framework

Factors	Definition	References
Autonomous AI affordances perception for mobility	An organisation's key actors' collective understanding of AI potentials for addressing mobility goals through proactive exploration.	Bandura (1986), Lehrig et al. (2019)
Vicarious AI affordances perception for mobility	An organisation's key actors' understanding of AI potentials for addressing mobility goals through serendipitous discovery.	Bandura (1986), Lehrig et al. (2019)
Organisational AI readiness	An organisation's preparedness to explore AI for identifying new mobility affordances.	Jöhnk et al. (2021), Pumplun et al. (2019)
AI-related actions of mobility ecosystem players	The extent which an organisation observes AI-related actions of other mobility ecosystem players.	Pumplun et al. (2019)
Prior IT/digital experience	The extent which an organisation previously uses and implements IT and digital solutions to address business use cases.	Alsheibani et al. (2019)
Organisational AI absorptive capacity	The extent to which an organisation acquires and assimilates AI knowledge.	Zahra and George (2002)

Table 1. Constructs in the AI Affordances Perception Framework

3.1 Vicarious AI Affordances Perception for Mobility

We define the vicarious AI affordances perception for mobility as an organisation's key actors' understanding of AI potentials for addressing mobility goals through serendipitous discovery (Bandura 1986; Lehrig et al. 2019). Organisational key actors include decision-makers and top managers instead of general employees since top executives are responsible for setting the AI vision, strategic directions and actions in their organisations (Tan et al. 2020). Mobility-related goals could be organisational and ecosystem-shared, which may contain, as mentioned in section 2.1, providing affordable, effective, and sustainable mobility, accommodating customer expectations of personalised user-centric mobility services, and obtaining competitive advantages in the emerging dynamics of the mobility ecosystem. Adapted from Lehrig et al. (2019)'s argument, organisations perceive AI affordances vicariously simply because they observe a particular application of AI in mobility by other firms within the mobility ecosystem and afterwards realising that they could use the same features for a particular goal, without planning to make such observation in the first place.

A primary principle of the social cognitive theory is that a large amount of organisational learning happens serendipitously (i.e., by observing other firms' actions) rather than proactively through forethought and deliberate action (i.e., by interpreting the consequences of their own performances) (Bandura 1986). Given the serendipitous instead of intended or planned nature of vicarious affordances perception, organisations do not evaluate the expectations of success prior to the perception. Therefore, the organisation's beliefs about its capability to engage in the activities leading to affordances perception are unlikely to influence the vicarious affordances perception. Additionally, since vicarious affordance perceptions are based on imitating others' patterns of use, organisations could perceive affordances vicariously even though they lack deep knowledge of AI.

In contrast, since vicarious affordances perception occurs through observation, it relies on information from social sources/media. It is argued that perceptions about emerging technologies, particularly for practitioners, are influenced by what they see, hear, and sense from the media (Wiredu et al. 2021). Specific in this research context, some organisations in the mobility ecosystem have started to set AI visions or implemented AI in their products and services to address the issues such as heavy traffic and environmental pollution. Governments are also taking responsibility for prompting AI applications in mobility with regards to their development goals and governance strategies, and meanwhile, regulating AI applications in mobility. Through observing other mobility ecosystem organisations' AI-related actions, organisations could construct an understanding of AI or fear of AI. Despite the broad "black box" type of understanding of AI potentials gained from others' AI initiatives and efforts, higher amounts of others' use of AI offer the organisation greater opportunities to recognise AI use patterns suitable for imitation. Therefore, AI actions in the mobility ecosystem can positively contribute to vicarious AI affordances perception. Thus, the following proposition is proposed:

Proposition 1: AI-related actions of mobility ecosystem players positively affect an organisation's vicarious AI affordances perception for mobility.

3.2 Autonomous AI Affordances Perception for Mobility

Autonomous AI affordances perception for mobility is defined as an organisation's key actors' collective understanding of AI potentials for addressing mobility goals through proactive exploration (Bandura 1986; Lehrig et al. 2019). The organisation's key actors construct a shared interpretation of opportunities or fears of AI through internal connections and communications (Brown et al. 2015). The autonomous affordances perception in addition to information from social sources/media, requires organisational AI readiness and AI-related knowledge. It demands in terms of organisational readiness since the activities through which top executives and decision-makers can perceive affordances autonomously are uncertain search activities motivated by themselves. These search activities include noticing technical possibilities of AI and changing mobility ecosystem environments, leveraging that information with a combination of AI-related knowledge to interpret what such opportunities mean to the organisation and integrating these interpretations into a shared understanding across the organisation (Weick et al. 2005). It is possible that organisations spend substantial time and efforts exploring AI potentials to discover new actions but fail to do so. Therefore, the processes leading to autonomous affordances perception are uncertain, deliberate and are likely to be perceived as risky (Lehrig et al. 2019). This study proposes that AI readiness, AI absorptive capacity, and vicarious AI affordances perception, contribute to the autonomous AI affordances perceptions of mobility ecosystem organisations.

AI readiness in the context of this study is defined as an organisation's preparedness to explore AI for identifying new mobility affordances. This study adopts the concept of AI readiness to represent the organisational activities through which they explore the AI potentials and show interest to transfer their existing IT use patterns to a new purpose of addressing organisational and ecosystem-shared mobility-related goals (Lehrig et al. 2019).

The perspective of technology readiness provides an appropriate way to explore the possibility of a firm to perceive the technology affordances and benefits obtained from the technology use (Richey et al. 2007). The assessment of AI readiness enables firms to proactively identify potential gaps (e.g., resource reorganisation lags, limited technology abilities, and lack of AI leaderships) for successful AI adoption and thus to reduce risk and uncertainty associated with AI adoption decisions. In line with Lehrig et al. (2019)'s finding, organisational AI readiness is positively related to autonomous AI affordances perception for mobility. Therefore, the below proposition is conjectured:

Proposition 2: Organisational AI readiness positively affects an organisation's autonomous AI affordances perception for mobility.

The complex processes towards autonomous perceptions require substantial knowledge of AI. Organisations will require proactive learning to develop a sound understanding of AI to guide complex processes (Bandura 1986). Proactive organisational learning is highly dependent on feedback, which helps refine organisational representations of AI (Lehrig et al. 2019). Organisational key actors develop reasonable and provisional interpretations of AI potentials that mean to them by noticing and assimilating specific information (Brown et al. 2015). Specifically, it requires external AI knowledge to be transferred from AI applications and other organisations that use AI to the organisation. This process is much easier if the organisation has a similar knowledge of AI or can acquire and assimilate AI knowledge effectively (Murovec and Prodan 2009). Such proactive learning arises both through AI absorptive capacity and in vicarious affordance perceptions that generally precede autonomous affordance perceptions (Lehrig et al. 2019). Therefore, the following propositions are formulated:

Proposition 3: Vicarious AI affordance perception for mobility positively affects autonomous AI affordance perceptions for mobility.

Proposition 4: Organisational AI absorptive capacity positively affects autonomous AI affordance perceptions for mobility.

3.3 Antecedents of Organisational AI Readiness and Absorptive Capacity

If organisational AI readiness is an important antecedent of autonomous AI affordance perceptions for mobility, this brings forward the question of what influences organisational AI readiness. Drawing from SCT, the factors that influence organisational AI readiness could include performance accomplishments, modelling, and persuasion (Bandura 1986). In the context of AI use in mobility organisations, the performance accomplishments could be measured by organisational AI absorptive capacity and previous successful affordances perceptions. The more organisations absorb the knowledge of AI, the more confidence they could obtain in their ability to adapt AI (Cohen and Levinthal 1990; Zahra and George 2002). Furthermore, if organisations have successfully perceived AI affordances before, they would have obtained confidence in their ability for identifying new affordances. Given Lehrig et al. (2019)'s finding that vicarious affordance perceptions typically arise before autonomous affordance perceptions, organisations are likely to start establishing AI readiness and absorptive capacity from successful vicarious affordance perceptions, which expresses a performance accomplishment. The above arguments lead to:

Proposition 5: Organisational AI absorptive capacity positively affects organisational AI readiness.

Proposition 6: Vicarious AI affordances perception for mobility positively affects (Proposition 6a) organisational AI readiness and (Proposition 6b) AI absorptive capacity.

The second source of organisational AI readiness and absorptive capacity is modelling. When organisations observe how other organisations successfully use AI for mobility, they not only learn about potential ways of using AI but also develop AI readiness (Alsheibani et al. 2019). Observing other ecosystem players' use of AI for mobility helps organisations establish confidence in identifying possible ways of using AI for mobility, even though the outcomes of this exploration action are uncertain (Lehrig et al. 2019). Furthermore, prior successful IT experience and use of AI for a different goal provide organisations with opportunities to explore new use cases of AI for mobility, which helps mobilise greater AI readiness and absorptive capacity. Therefore, the following hypotheses are postulated:

Proposition 7: AI-related actions of mobility ecosystem players positively affect (Proposition 7a) organisational AI readiness and (Proposition 7b) AI absorptive capacity.

Proposition 8: Prior IT experience positively affects (Proposition 8a) organisational AI readiness and (Proposition 8b) AI absorptive capacity.

4 Conclusion

In conclusion, AI presents the potentials to transform organisations, industries, and ecosystems. However, there is a lack of understanding of the AI affordances perception of organisations in an ecosystem. To advance the AI affordances research, this paper provides an AI affordances perception framework drawing from the affordances theory and the social cognitive theory. This framework captures a nomological net of organisational and ecosystem factors that influence the AI affordances perception within the context of the mobility ecosystem transformation.

This conceptual framework, although suffers from empirical validity, contributes to the IS literature by drawing attention to the importance of the AI affordances perception construct as distinct from AI affordances actualisation. It offers a foundation for investigating AI affordances and developing other models related to AI affordances and related constructs. Researchers can apply this framework to identify factors that impact organisations' AI affordances perception within a given ecosystem. An ecosystem could not be researched without the locations in which the ecosystem is based. Therefore, researchers should focus on a specific location of ecosystems to ensure that the examined ecosystem is anchored within the same socio-political, regulatory, policy, and market environment.

The framework also opens avenues for empirical research. Here, both the validation of the two AI affordances perception constructs, and the testing of the nomological net and associated propositions are important research directions that can be scaled from our contribution. Particularly large-scale survey of top executives who have the agency to speak on behalf of their organisations could produce important insights how organisations are preparing for the future of AI. Because top executives are responsible for setting the AI vision, strategic directions and actions in their organisations, they are considered to be the most informed and appropriate to answer questions about what might influence AI affordances perceptions in accordance with organisational goals. Research can also take a qualitative direction to inductively develop an AI affordances perception theory. For mangers, the paper implies the importance of separating the hype surrounding AI from strategic exploration of AI aligned with shared organisation and ecosystem goals.

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