

Chapter 13

AI Meaning and Applications in the Consumer Sector of Retailing, Hospitality, and Tourism

Sandra Maria Correia Loureiro

 <https://orcid.org/0000-0001-8362-4430>

ISCTE, BRU, Instituto Universitário de Lisboa, Portugal

Muhammad Ashfaq

 <https://orcid.org/0000-0001-7602-0647>

Shenzhen University, China

Mariana Oliveira Berga Rodrigues

ISCTE, Instituto Universitário de Lisboa, Portugal

ABSTRACT

Artificial intelligence (AI) algorithms have been continuously adopted in businesses, such as retailing, hospitality, and tourism. The current chapter aims first to provide a conceptualization of evolution of AI. Second, it gives an overview of AI in business and finally points out examples of applications of AI in retailing, hospitality, and tourism. Third, the chapter offers suggestions for further research. This chapter is devoted to researchers and practitioners. The audience will benefit from an overview of AI meaning and potential research to be developed and also benefit from examples of other business that already employ such AI algorithms.

INTRODUCTION

Over the years, technology has been increasingly taking over our lives in a transparent but, yet tremendous way. Retail, hospitality, and tourism have started to adopt artificial intelligence (AI) to improve

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customers satisfaction and enhance experiences with services and products. Additionally, the adoption of AI is also transforming the industries by considering the importance of productivity and how it can optimize processes and operations by making them more efficient and effective (e.g., Russell & Norvig, 2016; Loureiro, Guerreiro, & Tussyadiah, 2020; Romero, Ruiz-Equihua, Loureiro, & Casaló, 2021). However, there is still some hesitation regarding the future of this technology in the market and how to fully embrace it.

The number of companies and startups that are investing in AI keeps growing rapidly. It is a highly discussed topic both by managers and researchers. Nonetheless, AI and data will only have a significant and potential impact when its use is applied to the right case. The technological advancements have resulted in structural shifts and strategies within companies and businesses from the retail, hospitality, and tourism industries, that are increasingly operating more in a knowledge-based environment due to the information the technology is able to provide (e.g., Rust & Huang, 2014; Rust, 2020; Loureiro, Japutra, Molinillo, & Bilro, 2021). Through the application of software and algorithms, AI can interpret data and deliver more detailed knowledge regarding consumers' profiles, allowing managers to produce a more personalized and valuable experience. Based on the above considerations, the current chapter aims to (1) provide a conceptualization of evolution of AI, (2) give an overview of AI in business and finally points out examples of applications of AI in retailing, hospitality, and tourism and (3) provide suggestions for further research

BACKGROUND

Defining Artificial Intelligence

Since the term was first introduced in 1956, a precise definition of *artificial intelligence* (AI) has been a subject of debates and even causing a state of confusion, with researchers referring to AI from varying aims and approaches to AI research. Central to these has been the definition and meaning of *intelligence* (Legg & Hutter, 2007) and whether intelligence should be viewed as one ability or many (Kak, 2006). These issues are also rooted in the fact that things that are artificially intelligent differ from those that are naturally intelligent (Fetzer, 1990); artificial systems are significantly different to humans.

Definitions of AI also changed over time, especially as AI technologies develop rapidly recently. As observed by Russell (1997), some researchers in AI have focused on creating systems that emulate human cognition, while others on creating intelligence without concern for human characteristics. Still, many have endeavored to develop useful tools and artifacts without concern for intelligence. Russell and Norvig (2016) summarize the various definitions of artificially intelligent systems into four categories along two dimensions: reasoning–behavior dimension and human performance–rationality dimension. These are: (1) systems that think like humans, (2) systems that act like humans, (3) systems that think rationally, and (4) systems that act rationally. While tensions exist between approaches centered around humans and those around rationality, Russell and Norvig (2016) argue that each direction has yielded useful insights.

In an attempt to test universal intelligence, Legg and Hutter (2007, p. 12) suggest that “intelligence measures an agent’s general ability to achieve goals in a wide range of environments.” This implies three components of intelligence: an agent, environments, and goals. To achieve its goal, the agent will interact with the environments by sending and receiving signals to and from the environments (action

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