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## The Privacy Paradox in the Data-Driven Marketplace: The Role of Knowledge Deficiency and Psychological Distance

Ruwan Bandara<sup>a,\*</sup>, Mario Fernando<sup>a</sup>, Shahriar Akter<sup>a</sup>

*School of Management, Operations & Marketing, Faculty of Business, University of Wollongong, Northfields Ave, Wollongong, NSW 2522, Australia*

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### Abstract

The current digital marketplace maneuvered by big data lures consumers to disclose information that is private, while they express concern about revealing personal information. The privacy paradox describes the unexpected behavior of people who disclose personal information in spite of being concerned by their privacy. In this paper, we explain the privacy paradox in the data-driven digital marketplace context. We take two related but different routes to expound the privacy paradox. Firstly, using the Theory of Incomplete Information (TII) we argue that, knowledge deficiency of consumers due to incomplete information impedes them to make a rational decision. Secondly, using the Construal Level Theory (CLT) we explain how abstract and psychologically distant privacy values are disparaged over more tangible and psychologically proximal shopping benefits. Our study proposes privacy behavior is not merely an outcome of a trade-off, but a decision process that is influenced by limited knowledge and psychological distance.

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*Keywords:* privacy paradox; data-driven marketplace; knowledge deficiency; psychological distance; big data

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\* Corresponding author. Tel.: +61481393488  
E-mail address: [hmrjb180@uowmail.edu.au](mailto:hmrjb180@uowmail.edu.au)

## 1. Introduction

Consumers have become ‘walking data generators’ in the new ecosystem of personal data markets where consumers’ data are incessantly collected, mined, and traded<sup>1</sup>. This zest for consumer data notably increased with the induction of big data analytics. Dawn of big data marks the most striking tech disruption since the introduction of the internet and rise of the digital economy<sup>2</sup>. Terms such as data revolution<sup>3</sup>, datification<sup>4</sup>, dataveillance<sup>5</sup>, and data deluge<sup>3</sup>, seem to enthrall all precincts of the society.

Enhanced by big data analytics, current digital marketplaces entice consumers with highly personalized and effortlessly customized products and services. For instance, Amazon’s automated customer service system delivers prime customer satisfaction and their dynamic pricing system adjusts pricing against competing sites every 15 seconds<sup>20</sup>. However, as all technologies have *dual effects*, data-driven marketplaces are not without negative consequences<sup>6</sup>. Most of the dissensions and arguments on this regard surface from the threats to consumers’ information privacy. Several privacy surveys and studies have found this to be true<sup>7-9</sup>.

However, several scholars have questioned how truly consumers are concerned about their privacy. This is mainly due to the *privacy paradox*; consumers’ pressing privacy concerns are not reflected in their online behavior<sup>8,10</sup>. Several scholars have investigated this particular dichotomy between privacy attitudes and privacy behavior with majority studies emanating from rational cost-benefit theories<sup>11</sup>. Based on behavioral economics and psychology literature we propose a combined effect of *knowledge deficiency* and *psychological distance* to illuminate the privacy paradox.

The problem this paper attempts to answer is; how can knowledge deficiency and psychological distance explain the disparity between privacy concerns and privacy behavior. Our paper is guided mainly by three theories; Privacy Calculus Theory (PCT)<sup>12,13</sup>, Theory of Incomplete Information (TII)<sup>14</sup>, and Construal Level Theory (CLT)<sup>15,16</sup>. Based on the assertions made by aforementioned theories, we provide a theoretical explanation for the emergence of the privacy paradox.

## 2. Literature review

The meteoric growth of the internet and emergence of ubiquitous and pervasive technologies have enabled the businesses to collect, store, mine, transmit, and trade consumer data at an unprecedented scale<sup>1,17</sup>. At present the question remains; has consumer data become more important to businesses than to consumers themselves? With the commodification of personal data, consumer-generated data have become the strategic capital for businesses in the digital marketplace yielding market intelligence, competitive advantage, and massive revenue<sup>1,18,19</sup>. Steered by its high volume, variety, velocity, veracity and value, big data analytics have magnified the craze for personal data<sup>20,21</sup>. Even though ubiquitous computing and data-driven technologies provide numerous advantages for businesses, they are not without drawbacks. Especially arguments and controversies over the threats to consumer privacy have intensified in the recent years.

Consumers have voiced grave concerns over privacy in surveys, opinion polls, and research. However, consumer behavior in online platforms shows otherwise. This discrepancy between consumer worries over privacy and their actual behavior is widely known as the privacy paradox<sup>11</sup>. This particular quandary has been in the crosshairs of privacy scholars during the past several years in which majority of them have tried to explicate it through economic and social theories. The Privacy Calculus Theory (PCT) based interpretations assert that, consumers conduct a rational calculus of costs and benefits prior to divulging their information<sup>12</sup>. When consumers perceive the benefits are greater than risks, they divulge their information irrespective of the privacy concerns<sup>13</sup>. Social Theory based interpretations in a similar way posit that, consumers have to choose between emotional ties or attachment towards one’s online communities and risks of losing privacy by sharing information<sup>11</sup>. It has been found that social norms<sup>22</sup> and social rewards<sup>23</sup> more often overwhelm consumers to undermine their privacy. Systematic review of privacy paradox literature reveals that, even few in number, some scholars have taken attempts to interpret privacy paradox beyond rational and social based decision making<sup>11</sup>.

Theory of Incomplete Information emerged from the work on game theory by the Noble Laureate John Harsanyi<sup>14</sup>. This theory is based on the assumption that, all parties involved in an action are not equally informed. Therefore, parties involved in a certain action do not know each other’s values, utilities, and rules. In the online

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