Cognitive computing based ethical principles for improving organisational reputation: A B2B digital marketing perspective

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A B S T R A C T

Cognitive computing is ushering in the fourth industrial revolution through its promises of improved accuracy, scalability and personalisation. Therefore, business-to-business (B2B) organisations are wavererring in the decision for adoption into their digital marketing initiatives. However, embracing moral rules and/or moral judgments in their digital marketing innovation can be challenging, since making mistakes could damage reputations. Therefore, this study applies the ethical principles of cognitive computing in B2B digital marketing business-centric ethical challenges. An integrated theoretical framework grounded on multidisciplinary studies is proposed. The primary data were collected from 300 respondents within B2B businesses. The results of this research led to the conclusion that good ethical practices are essential for the improvement of both organisational effectiveness and organisational reputation. Increased organisational reputation delivers a competitive edge in fast-growing marketplaces. B2B businesses need to look for proactive ways to achieve continuous improvement.

1. Introduction

B2B organisations need well-thought-out strategic alignment processes for the establishment of long-term relationships between seller and buyer organisations (Cartwright et al., 2021; Ford et al., 2003). B2B long-term relationships between buyers and sellers can deteriorate without such a formal organisational framework (Pedersen et al., 2020). The Internet is a low-cost transactional network; therefore, cost savings and efficiency improvements related to digital purchasing help both seller and buyer organisations to maintain long-term relationships (Deeter-Schmelz et al., 2001). Consequently, B2B organisations are embracing social media to help achieve a myriad of business objectives (Dwivedi et al., 2019, 2021; Tiwary et al., 2021), such as long-term relationship management.

Business-centric ethics is defined by the interaction between ethics and business (De George, 2011). From a normative standpoint, business-centric ethics refers to the principles, values and norms that guide organisational decisions (Ferrell et al., 2019). In the field of transformative services (i.e., potential for services to improve people’s lives and well-being), it may be a mistake to leave out the ethical context that provides motivation, purpose and intentionality, which in turn influence the ability to support an individual’s well-being (Parsons et al., 2021). Business-centric ethical challenges occur in digital marketing when a given decision, scenario or recommended activity by underlying technology solution creates a conflict with the buyer’s or seller’s moral principles (Purwanto et al., 2019). When assessing moral issues, one of the most common questions that ethics poses is, ‘What should I/we do’ (Vallaster et al., 2019) and there are usually no ready-made answers, no magic formula that allow ‘moral sums’ to be performed correctly (Delacroix & Wagner, 2021). Hence, there is a need to design, develop and manage the ethical principles underpinning technology such as cognitive computing (CC) to ensure that it follows business rules and core organisational values. A business-centric ethical challenge in B2B signifies the business-related obstacles to overcome, whereas the ethical issue in CC denotes the principles to be applied to address such challenges.

CC is an approach to technology that allows humans to collaborate with machines to gain actionable insights (Hurwitz et al., 2015) and make suggestions for decision making (Yao, 2016). Techniques, including Big Data Analytics (BDA), Machine Learning (ML), Neural Networks (NN), Internet of Things (IoT), Natural Language Processing (NLP), Reinforcement Learning, Cloud Computing, Data Visualisation...
and Sentiment Analysis (SA) constitute a CC system (Chen et al., 2018; Janssen et al., 2019; Mishra et al., 2017; Sinha et al., 2019). B2B marketing and practice require careful consideration of CC technology’s impact on value creation including innovations (Siemieniako, 2019). Although the details of business-centric ethical standards in digital marketing for B2B may vary from person to person, there are core ethical principles that can be built into CC, while others can be customised based on their need. Since CC is an umbrella term, the scope of CC falls into ML and NN techniques from the perspective of this research.

The concept of organisational reputation (OR) plays a central role as it is embedded in the past actions of the relationships formed by the organisation (Lange et al., 2011). The literature on OR has proposed using measures such as stakeholder behaviour (Luoma-aho, 2008), employee commitment (Ochere-Ankrah et al., 2016) and decisions related to specific inputs and outputs (Yang & Grunig, 2005). Organisational effectiveness (OE) is the accomplishment of goals accepted in the mission or vision statement of the organisation (Manoharan & Singal, 2019) and to different people, it means different things (Cameron, 2015). The literature on OE has proposed measures such as knowledge management (Zheng et al., 2010), organisational culture (Gregory et al., 2009), transformational leadership-style (Nazarian et al., 2021). In the digital marketing context, ethical perceptions have focused on loyalty (Valenzuela et al., 2010), purchase intentions (Agag, 2019) and consumer trust (Diallo & Lambey-Chechcin, 2017). Digital marketing creates an ideal atmosphere for unethical activities particularly through those digital marketing channels that raise privacy concerns among organisations and consumers (Jukay, 2021). Therefore, the emphasis must be on overcoming business-centric ethical challenges in B2B digital marketing to protect the buyers’ interests. However, based on above discussions, we could not find literature that has (i) categorically called for the core ethical principles of CC; (ii) aligned the ethical issues of CC to B2B digital marketing business-centric ethical challenges; (iii) witnessed improvements in OE and OR. Concerning the gaps, the literature has highlighted the future research on organisational ethics since the management of organisational ethics has rekindled the interest of researchers and practitioners (Martinez et al., 2021). Therefore, this research will highlight why B2B is concerned with ethics in CC solutions in-built with digital marketing moral behaviours for ethical decision making. To achieve this, this study attempts to address the following three research questions (RQ):

RQ1. How does the proposed research model improve organisational effectiveness by applying CC ethical principles to B2B digital marketing business-centric ethical challenges?

RQ2. How does organisational effectiveness positively influence organisational reputation?

RQ3. How does an ethical work climate have an association with CC ethical principles towards organisational effectiveness?

To address these research questions, this study aims to explore the B2B digital marketing business-centric ethical challenges and ethical principles for cognitive computing. To achieve that, the study has formulated the following objectives: (i) propose an integrated theoretical framework; (ii) discuss ethical principles of cognitive computing; and (iii) empirically validate the alignment of ethical issues of cognitive computing in B2B digital marketing business-centric ethical challenges to improve OR. The theoretical implication intends to discuss the integrated theoretical framework. The managerial implication intends to observe improved OR for B2B marketing practitioners.

The rest of this paper is organised into nine Sections as follows. Section 2 presents the theoretical background. The hypothesis formulation is covered in Section 3, Section 4 outlines the research methodology. This is followed by the data analysis and results (Section 5), discussion (Section 6), theoretical implications (Section 7), managerial implications (Section 8) and limitations and the proposing of further lines of research (Section 9). Finally, Section 10 draws conclusions from the research.

2. Theoretical background

For a better understanding and implementation of the technology, a business must consider requirements and expectations in terms of ethics (Di Vaio et al., 2020), and therefore there is a need for a theoretical background. This section describes the theoretical foundation of the study by using the building blocks B2B digital marketing business-centric ethical challenges and CC ethical principles. It also defines organisational reputation, organisational effectiveness in the context of this study followed by the integrated theoretical framework.

2.1. B2B digital marketing based ethical challenges

Business-centric ethics is seen as an important part of decision making in marketing (Eagle & Dahl, 2015). The literature postulates that investigating the impact of ethics on B2B advertising effectiveness could help achieve a better understanding (Cortez et al., 2020). In terms of premium pricing, the B2B business brand image plays a key influence in organisational buyer decision-making (Balmer et al., 2020). To tackle the sales force management challenge, more research is needed on how Internet-based information systems affect outbound marketing and, as a result, how the creation and implementation of industrial sales force strategies (Albers et al., 2010). Government programs encourage research and development across supply chains, but supply markets are paid a little attention. That could be due to a fear of being seen to influence markets, which can lead to anticompetitive practices (Knight et al., 2015). Data exchange between organisations on a B2B platform is alleged to have violated privacy laws, resulting in millions of unsolicited marketing communications and further jeopardising the security of individuals and enterprises (Lin et al., 2020). Based on above discussions, we advocate that the core business-centric ethical challenges that arise in various B2B digital marketing practices are advertising, pricing, outbound marketing, anticompetitive practices and privacy. Each ethical challenge is discussed below.

2.1.1. Advertising

Digital advertising offers public relations and imperative communication options to B2B organisations. By its essence, advertising involves an element of persuasion and therefore its position in public relations demands careful ethical analysis and consideration. The existing literature that discusses business-centric ethical challenges in advertising, such as misleading advertising, has been an ethical challenge in digital marketing (Carson et al., 1985; Jackson, 1990). Ethical challenges clearly arise in advertising (Drumwright & Murphy, 2004) and women’s advertising, for example, is responsible for often producing unethical outcomes by portraying women as objects i.e., female economy in B2B (Cohan, 2001). Ethics is a significant and crucial aspect of advertising (Austin & Reed, 1999). Therefore, advertisers must take suitable and responsible decisions based on ethical considerations (Beil, 2001) and while promoting products or services, advertisers need to ensure that any advertising, statement or quote is neither false or misleading.

2.1.2. Pricing

There are various types of unethical business practices involved with setting the prices of the products and services. The auctioneer is an agent of the seller in auctions and this can promote corruption by orchestrating bid-rigging in inviting a bidder to either lower or raise the bid, whichever is more profitable (Lenzwiler & Wolfstetter, 2010). This leads to uncompetitive tendering processes, which can result in businesses paying higher prices or providing products or services of lower quality. Predatory pricing is the use of prices by a dominant B2B firm to restrict competition by driving out new competitors or deterring entrants (Joskow & Kleverick, 1979) and is unlawful in most Western jurisdictions as it is an effective tool of monopolisation (Easterbrook, 1981).
2.1.3. Outbound marketing

This is a marketing tactic that pushes business messages directly to a large audience rather than waiting for target buyers to evaluate alternatives. It is a one-way conversation that focuses on the reason stating why the audience should buy. B2B digital marketing typically uses multiple-channels such as email, paid social media advertising, display ads, blogs and digital surveys for direct marketing. Increased unethical practices in the new Internet-based global economy (Rieck, 1998), cyberspace crime (Rothfeder, 1996) and security risks (Ismagilova et al., 2020; Pfleeger, 1997) persistently led to more public debate about outbound marketing. Outbound marketing through various intermediaries can be damaging to society by pyramid schemes (Galasintu et al., 2018).

2.2. Ethical principles of cognitive computing

It is feasible to group ethical issues presented by technology into the general categories of normative principles, research and knowledge advancement (Heitman, 1998) and hence we advocate that CC ethical principles are represented by the ethical knowledge creation, technological process activities and connectionist approach by simulating human thought processes and make suggestions in a computerised model. Since technology and marketing require the processing and use of personal and often sensitive data, the business has a duty of care towards customers (Kenny et al., 2012), and hence we advocate that ethical principles grounded in the ethical issues of CC can overcome B2B digital marketing business-centric ethical challenges. The importance of ethical behaviour for business was outlined by (Tariq, n.d.; Trevino et al., 2014) with linkages to corporate scandals, brand damage, socially responsible activities, benefits of ethical behaviour and work context.

The starting point for any ethical consideration can be reduced to the assertion that net benefits should outweigh net harm or inconvenience including the acquisition of new knowledge (McCullagh et al., 2014). Business-centric considerations into ethical practices benefit the organisation (Wang et al., 2016). To eliminate biases, there is a need to improve fairness and equality, and to further assist in the interpretation of findings (Trocín et al., 2021). This points to the need for an ethical principle of fairness. With the rapid advancement of artificial intelligence (AI) technology in recent decades, there has been growing discussion about AI’s impact on people’s daily life (Zhang et al., 2021) and this underscores the need for the application of ethical principles. Current AI ethics standards have serious faults and a variety of AI ethics that are crucial for AI research, development, and application are absent or omitted in current guidelines (Zhang & Aslan, 2021). That suggests the need for the establishment of ethical principles. CC is derived from AI (Behera et al., 2019). Legal expertise, ethical and privacy training, data science and software engineering are all needed to implement CC systems for effective service delivery (Makas et al., 2021), therefore signifies the need for a governance ethical principle. As a result, we advocate that CC ethical issues are grounded on four ethical principles; purpose, fairness, disclosure and governance.

- Ethical Principle 1: Purpose

An information system’s precise analysis success depends not only on the objective but also on the difficulty of the tasks (Maynard & Hakel, 1997), so in a similar analogy, every CC offering has tasks and objectives. The CC task is defined as the CC suggesting better decisions based on the data. For example, to a B2B personalised buyer, it can be which product or service to suggest at what price, whether to flag an online transaction as fraudulent, or what price to quote to the B2B prospect. To discover the factors influencing the pricing option of products or services, the fuzzy association rule mining approach and the fuzzy logic technique can be used (Leung et al., 2019). ML algorithms, such as logistic regression, back-propagation neural networks, decision trees and support vector machines can be used to reduce or eliminate financial fraud (Song et al., 2014).

The CC objective is defined as the measure that the CC must optimise. This may be maximising the online sales revenue of a B2B sales business, minimising risk for B2B buyers or prospects, maximising the profit margins of a B2B sales business, or reducing the expenses of a B2B sales business. Particular attention has to be paid to situations involving vulnerable groups such as hard-to-reach or risk-averse buyers or sellers. Such vulnerable groups should be first identified and then organisational protection mechanisms should be defined. Vulnerability indicators help monitor and track changing vulnerabilities over time and space (Shah et al., 2013). ML algorithms, such as linear regression, Bayesian Ridge Regression, Random Forest Regression, XGB regression and extremely randomised trees regression, can be used to predict the vulnerability indicator scores (Jakariya et al., 2020). Businesses can choose the desired degree of privacy by placing the overall design of a privacy-improving ML system within a decision-making framework (Jordan & Mitchell, 2015).

Short-term objectives improve quality in long-term solutions (Zhu et al., 2019), and therefore, the long-term impact of short-term objectives has to be considered. Since CC has the potential to ruthless optimise its ability to achieve its stated goals, it may suggest decisions that meet short-term goals regardless of the long-term costs. This includes suggesting a short-term profit that would incur reputation at risk and damage brand value. Short-term objectives may have little impact individually, but that cumulatively can develop into problems over extended periods. For consideration of short-term goals, the prediction of time series using multi-layer perceptron neural networks trained with a multi-objective genetic algorithm and extreme machine learning coupled with the nearest neighbor approach can be used (Ak et al., 2015).

In summary, the general principle to be applied is that CC actions should have a net good outcome for society.

- Ethical Principle 2: Fairness

Fairness is an important criterion of success in all resource allocation schemes, including in distributed computer systems (Jain et al., 1984).

- Ethical Principle 3: Privacy

Practitioners of B2B marketing must be aware of data privacy concerns (Wang et al., 2020), as buyers and sellers seek privacy while conducting their transactions (Cousins & Robey, 2005). Sales can be highly influenced by platform policies such as security and privacy guarantees and thus providing information related to these policies may be more relevant in the B2B context (Islam et al., 2020). The lack of personal contact and anonymity in B2B industrial product-service systems creates uncertainty, which leads to greater privacy concerns (Mourtzi et al., 2021). In the context of B2B, the privacy policies of e-commerce platforms have a significant impact on sales (Islam et al., 2020). Early-stage technological acceptability and privacy have a big influence on B2B social media usage (Tiwary et al., 2021). This justifies the fact that several platforms are compliant with B2B buyer privacy requirements. Data privacy is now a part of societal consciousness. Every B2B digital marketer must respond to that, especially as trust is being an increasingly essential factor and regulations begin to bite.

- Ethical Principle 4: Disclosure

Legal expertise, ethical and privacy training, data science and software engineering are all needed to implement CC systems for effective service delivery (Makas et al., 2021), therefore signifies the need for a governance ethical principle. As a result, we advocate that CC ethical issues are grounded on four ethical principles; purpose, fairness, disclosure and governance.
Fairness is considered to be one of the most commonly cited challenges facing B2B digital marketing (2002). The principle to be followed is that the behaviour of CC should avoid discrimination against protected or sensitive attributes. Illegal use of protected or sensitive attributes can lead to high fines, reputation at damage and increase insecurity in business transactions (Wehinger, 2011). Protected attributes include a B2B buyer’s or prospect’s gender, race, ethnicity, colour, language, religion, disability, age, sexual orientation, pregnancy, political opinion, medical record, criminal record, marital or relationship status, trade union activity and genetic information. Sensitive attributes include a B2B buyer’s or prospect’s age, disability, language, and socio-economic status. To ensure fairness of decision-making predictive models, the collection of sensitive personal data is important and a non-discriminatory regression model can be adopted to prevent discrimination with the application of limitation, data quality, purpose specification, security safeguards, openness, individual participation and accountability principles (Ziobaitė & Custers, 2016).

The other principle to be followed is that CC should not be trained on data that have unequal effects. If the historical evidence contains examples of negative outcomes for vulnerable groups then it will tend to repeat decisions that contribute to poor outcomes. Data should reflect the diversity with which CC will communicate with the target population and decisions should not result from a metaphorical flipping of the coin. An accumulation of cognitive, perceptual and motivational biases distorts human judgment and decision-making (Pronin, 2007). If CC continues to replicate human errors, then the behaviour will become ingrained for the future, so careful experiments and diagnostics have to be put in place to uncover and remove such biases. To make a correct decision, the CC principles require a boundary for judgment and a threshold at which the result changes. Opacity is a type of corporate confidentiality or proprietary security (Pasquale, 2015) and refers to the particular approaches used in ML and neural networks (Burrell, 2016). Therefore, building algorithmic opacity enforces transparency (Burrell, 2016).

In summary, the general principle to be applied is that the behaviour of CC should avoid discrimination against protected and sensitive features and avoid entrenching historical disadvantage.

- Ethical Principle 3: Disclosure

Autonomy is a primary motive for the vast majority of start-up businesses (Van Gelderen & Jansen, 2006), so the core fundamental principle of CC business ethics is to respect autonomy. Applying autonomy to CC business-centric ethics leads to the duty to disclose to B2B stakeholders those interactions with the CC so that such stakeholders can make informed decisions. We advocate that the CC processes and decisions need to be clear to allow for the stakeholders to make informed choices, the CC must be able to give understandable explanations of its decision-making process and the reasons for each decision it makes. The strengths and limitations of CC should be clearly communicated to the stakeholders so as to ensure trustworthiness, disclose the ramifications of communicating with CC and both parties’ rights and obligations. Human-friendly and user-oriented explanations, that are contrastive, selective, credible and conversational, can be created to improve interpretability, which may be more satisfying as a means of communication for humans (Du et al., 2019).

In summary, the general principle to be applied is to reveal sufficient information to CC stakeholders to allow informed decision making.

- Ethical Principle 4: Governance

Good governance leads to good management, good performance, good management of public money, good interaction with the public and, eventually, good results for people of services and hence it is recommended to promote the principles of the authority and demonstrate the values of good governance by maintaining high standards of behaviour and conduct (Council, 2003). Systems need to be scrutinised in various ways from multiple viewpoints to achieve robust governance (Wachter et al., 2017) and ML involves the identification of tasks as an optimizing technique, wherein the problems need to be clearly defined so that they can be solved and the effectiveness of a solution can be evaluated (Stilgoe, 2018).

An organisation must ensure that CC systems are safe, effective and functional, and that effective processes are in place to ensure responsibility and accountability for those CC systems. Like any other technology, CC can be used for ethical or unethical purposes, so an organisation should have clearly stated ethical guidelines that apply to all its CC systems. Risk evaluation should be carried out to identify risks that could have a significant impact on stakeholders for the CC system’s success or failure. In cases where such risks arise, consideration should be given about whether those risks can be eliminated, minimised or justified within the ethical guidelines. Various levels of priority have been given to risk classification and risk prediction, wherein risk classification is primarily approached using non-parametric ML methods, while ML parametric methods, such as the logistic regression model, are commonly used to achieve risk estimation (Kruppa et al., 2012).

In summary, the general principle to be applied is that wherever there is risk, high governance standards need to be applied to the design, training, implementation and operation of a CC system.

- Organisational effectiveness and organisational reputation

Corporate ethics and corporate social responsibility challenges are an increasing focus of media reporting (Brunk, 2010) and as a result, ethics itself is a sales pitch or an important aspect of a business’s image. Organisational effectiveness definitions vary and its conceptualisation largely depends on the theory and method used (Cameron, 1986; Campbell, 1977). Organisational effectiveness in the context of this study means deliberately applying ethical principles of CC to a B2B organisation’s digital marketing business-centric ethical challenges to reduce or remove roadblocks in terms of regulatory risk, misleading claims, legal actions, price discrimination and dumping. The reputation at dimension in the phrase ‘organisational effectiveness reputation’ or simply ‘organisational reputation’ provides a further and important viewpoint by providing a subjective perception that individual buyers have regarding the relationships between sellers’ offerings (Willems et al., 2016).

Advertising is typically used to understand barriers to organisational effectiveness (Perkins et al., 2000). A strong difference in organisational effectiveness with regards to the ability to control aspects of the environment is pricing (Hirsch, 1975). Outbound marketing ethics and social responsibility are widely accepted to be essential components of organisational effectiveness (Singhapakdi et al., 1994). Anticompetitive practices should be subjected to scrutiny and/or regulation in the procurement function and the role that an efficient procurement function plays in organisational effectiveness (Musau, 2014). Maintaining the privacy of internal and external stakeholders leads to increased overall organisational effectiveness (Yang & Wan, 2004).

- Theories of ethical challenges in marketing

The major theoretical models for decision-making processes involving ethical challenges in marketing were proposed by (Ferrell &
Theory of influential computer ethics

An influential computer ethics theory was proposed in 1985 (Bynum, 2011). The theory claims that (i) computer technology is logically malleable in that it can be formed and molded to perform any action that can be defined in terms of inputs, outputs and logical process relation; and (ii) a common challenge emerges in computer ethics when there is a policy gap in how information technology can be used.

Theories of organisational effectiveness

One major theoretical model (Cameron, 1981; Dalton & Dalton, 1988; Schermerhorn et al., 2004) focuses on organisational effectiveness. Schermerhorn’s model focuses on key operational objectives such as profit, innovation and product quality (Schermerhorn et al., 2004) whereas Dalton’s model focuses on cost-benefit relation (Dalton & Dalton, 1988). Moreover, Cameron’s model focuses on trust, honesty and goodwill (Cameron, 1981). The research limitation in such models is the lack of emphasis on the ability of the technology to increase the organisational effectiveness and none of them focused on the need to reduce or remove organisational roadblocks in terms of for example regulatory risk, misleading claims, legal actions, price discrimination, and dumping.

Theory of ethical work climate

The ‘ethical work climate’ is defined as an organisation’s shared perceptions of what morally correct behaviour is and how ethical challenges should be met (Victor & Cullen, 1988). It emerges primarily from organisational processes that express managerial expectations concerning moral actions and processes to address ethical problems (Mayer et al., 2010). Victor and Cullen (1988) theorise that organisational ethical work climates differ in two dimensions, stressing the ethical criteria (egoism, benevolence or principle) and the social context or loci of study (individual, local and cosmopolitan).

Theory of organisational reputation

Organisational reputation has proved to be a significant factor in determining an organisation’s economic value (Gotsi & Wilson, 2001) and play major leadership roles (Blass & Ferris, 2007). Zinko et al. (2007) theorise organisational reputation theory by defining it as an accepted, mutual interpretation by others, involving behavioural adjustment originating from social comparisons with reference to others, resulting in a deviation from behavioural norms in one context as observed and assessed by others.

Based on above discussions, we propose an integrated theoretical framework termed ‘Cognitive computing enabled B2B ethical digital marketing’ based on Hunt-Vitell theory (Hunt & Vitell, 1986), influential computer ethics theory (Bynum, 2011), ethical climate theory (Victor & Cullen, 1988), Cameron’s theory (Cameron, 1981) and organisational reputation theory (Gotsi & Wilson, 2001). Influential computer ethics theory has ‘policy vacuums’ and CC ethical principles fill the proposed vacuums of influential computer ethics theory. Hunt-Vitell’s theory has ethical judgments and B2B digital marketing challenges are the proposed ethical judgments inherent in Hunt-Vitell theory. Organisational effectiveness is considered according to Cameron’s theory. Organisational reputation is referred from organisational reputation theory and ethical work climate is considered according to ethical climate theory. Each theory is connected to the others through the ethics lens.

Influential computer ethics theory (Bynum, 2011), Hunt-Vitell theory (Hunt & Vitell, 1986), Cameron’s theory (Cameron, 1981), organisational reputation theory (Gotsi & Wilson, 2001) and ethical climate theory (Victor & Cullen, 1988) exist in silos. Hence there is a need to integrate the pre-qualified components from each theory to meet the objective of this research. The integrated theoretical framework is shown in Fig. 1. The figure shows the concept behind the theoretical underpinning, conceptualisation of framework from prior research, fulfillment of the research goal involving the application of CC ethical principles to B2B digital marketing business-centric ethical challenges with the support of moderator and mediator.

3. Hypotheses development

The study introduced new constructs: Purpose Expectancy, Fairness Expectancy, Disclosure Expectancy, Governance Expectancy and adopted Organisational Effectiveness, Ethical Work Climate and Organisational Reputation from existing studies. Table 1 presents the definition and source/reference of each construct.

Fig. 2 shows the conceptual model based on the selected constructs as defined above. Hypotheses such as H1, H2, H3, H4, and H6 represent the direct effect and H5a, H5b, H5c and H5d represent the moderating effect in the conceptual model.

The study intends to validate the research questions (RQs) through hypotheses. Therefore, the hypotheses H1 to H4 validate RQ1, hypothesis H6 validate RQ2 and hypotheses H5a to H5d validate RQ3. Each hypothesis is discussed below.

3.1. Purpose Expectancy (PE) → Organisational effectiveness (OE)

The fundamental purpose of a B2B business is to control advertising, pricing and outbound marketing challenges in digital marketing initiatives to positively influence OE through technology adoption. Research suggests that the rational approach to OE is through innovation in technology (Wang, 2005) and the pillars are striving for goals using various tasks (Choo, 2013). Corporate ethics is an integral aspect of a successful organisation (Esmaeili et al., 2016). Prevention of corruption and misuse of power are objectives of ethical businesses (Esmaeili et al., 2016), thus, such ethics built on CC plays an important role. OE encompasses a range of evaluation opportunities and its activities benefit society (Cunningham, 1977). Finally, increased OE plays an important role in promoting the growth of organisations (Aydin & Ceylan, 2009).

In line with Pershing (2006), the purpose of the code of ethics is to include the principles of (i) providing value to consumers, their clients, and the global environment; (ii) promoting and utilizing established techniques and criteria for performance technologies that comply with existing knowledge of theory, science and practice; (iii) working with clients collaboratively and becoming a trusted strategic partner; (iv) practising truthfulness and, integrity towards clients, peers and others; and (v) maintaining the confidentiality of customers and preventing conflicts of interest. Such principles are considered to be positive practices and in line with Cameron et al. (2011), positive ethical practices are a significant measure of organisational effectiveness. The information ethics in the information systems, including computer ethics, business ethics, information philosophy and social epistemology, determine what is morally right or wrong, what should be done, what duties, etc. judge the information systems’ good morality (Floridi, 2006). We advocate against business practices such as anticompetitive pricing, price fixing,
Purpose Expectancy (PE) will positively influence Organisational Effectiveness (OE). Therefore, it is hypothesised:

**H1:** Purpose Expectancy (PE) will positively influence Organisational Effectiveness (OE).

![Fig. 1. Theoretical framework (Source adapted from Bynum, 2011, Cameron, 1981, Gotsi & Wilson, 2001, Hunt & Vitell, 1986, Victor & Cullen, 1988).](image)

### Table 1

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<tr>
<th>Construct</th>
<th>Definition</th>
<th>Source/Reference</th>
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<tr>
<td>Organisational Effectiveness (OE)</td>
<td>It is defined as the degree to which roadblocks of B2B organisations are reduced or removed in terms of regulatory risk, misleading claims, legal actions, price discrimination, dumping, etc.</td>
<td>Mishra &amp; Miura, 2017</td>
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<td>Purpose Expectancy (PE)</td>
<td>It is defined as the degree to which the CC ethical principle named ‘Purpose’ is created to administer B2B digital marketing challenges such as advertising, pricing, and outbound marketing, etc. to influence OE.</td>
<td>Zoble &amp; Lehman, 1969</td>
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<td>Fairness Expectancy (FE)</td>
<td>It is defined as the degree to which the CC ethical principle named ‘Fairness’ treats B2B digital marketing challenges such as advertising, pricing, and outbound marketing, etc. without favoritism or discrimination to influence OE.</td>
<td>Austin et al., 1980</td>
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<tr>
<td>Disclosure Expectancy (DE)</td>
<td>It is defined as the degree to which the CC ethical principle named ‘Disclosure’ discloses B2B digital marketing challenges such as advertising, pricing, and outbound marketing, etc. to influence OE.</td>
<td>Wilson &amp; Rappaport, 1974</td>
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<tr>
<td>Governance Expectancy (GE)</td>
<td>It is defined as the degree to which the CC ethical principle named ‘Governance’ governs B2B digital marketing challenges such as advertising, pricing, and outbound marketing, etc. to influence OE.</td>
<td>Reidpath &amp; Allotey, 2006</td>
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<td>Ethical Work Climate (EWC)</td>
<td>It refers to the moral atmosphere of the work environment and the level of practice of organisational ethics.</td>
<td>Victor &amp; Cullen, 1988</td>
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<td>Organisational Reputation (OR)</td>
<td>It is the subjective perception of individual buyers regarding the seller’s intangible resources reflecting organisational affective or emotional evaluation from social perception, including financial aspects, sustainability, media exposure, and public sensitivity at a point in time and overtime.</td>
<td>Zinolo et al., 2007</td>
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3.2. Fairness Expectancy (FE) → Organisation effectiveness (OE)

The expectation from the B2B business is to be fair in price, services in the digital advertisement for a good impact on OE by using technology. Research suggests that OE encompasses the company’s management, its people and culture, the provision of the product or service, racial discrimination in favour of the largest demographic group and sexism in the workforce as the most apparent in promotional areas (Harel et al., 2003). Barriers to OE are discrimination, family-life demands, prejudice and stereotyping, which result in unfair outcomes in many cases (Elmuti et al., 2009). The use of fair treatment and fair practices is the primary pre-condition for fostering OE as it invokes a moral responsibility that goes beyond effective response (Choudhary & Kumar, 2011). Interactional fairness is of the utmost importance to clients; therefore, clients should be handled equally at any point of contact and the quality of service is highly affected by service fairness, so fair service contributes to a high perceived quality of service (Giovani et al., 2015).

OE in quality-oriented organisations is directed at the interaction between processes within the organisation and their influence on the quality of services and products delivered to external customers of the organisation (Gilbert & Parhizgari, 2000). Organisational efficiency concerns aspects such as the need to create ever more lean, productive yet intelligently efficient and effective products or services, and to make organisations more customer-centered. That requires ever increasing cross-disciplinary insight, and therefore it is crucial to attempt them through strategic outcomes of OE such as innovation, customer centricity and operational excellence (Sparrow & Cooper, 2014). There can be a golden thread that connects many matters such as the illegal use of protected or sensitive attributes, historical evidence of negative outcomes for vulnerable groups, etc. but that can be resolved within the boundary of fair ethical judgment. We argue that, by providing specific business-centric ethical principles an organisation’s code of ethics minimises legal ambiguities when making decisions and fulfills multiple purposes such as (i) conveying a common set of principles and responsibilities; (ii) complying with regulatory standards and industry patterns; (iii) significant affecting on employee purchasing behaviours; (iv) providing, promoting and honouring outstanding service; and (v) adopting continuous improvement. Therefore, it is hypothesised:

**H2:** Fairness Expectancy (FE) will positively influence Organisational Effectiveness (OE).
7

3.3. Disclosure Expectancy (DE) → Organisation effectiveness (OE)

B2B businesses that do not disclose put themselves at risk. The expectation from B2B businesses is that using technology to disclose sufficient information to the seller for their decision making will have a good impact on OE. Research suggests that an organisation’s freedom to operate within its area of expertise is vital to its success, and overall OE is based on autonomy (Dondero, 1997). Autonomy is commonly seen as a beneficial attribute related to organisational commitment, organisational effectiveness and increased job performance (Arnold et al., 1993; Ballou, 1998) and as an integral aspect of worker satisfaction (Finn, 2001). It applies to several variables that are essential to OE (Brock, 2003). Without specifically observing outputs and lacking concrete and quantifiable performance data, stakeholders rely on cues or signals to inform their assessments of OE (Bryce, 2007; Hansmann, 1980; Mayer & Maleham, 1997; Padanyi & Gainer, 2003; Radbourne, 2003).

The present and past interactions of stakeholders with an organisation, as seen through the lenses of their frames of reference, thus form the degree to which they trust a particular organisation (Greyser, 1999; Sarstedt & Scholderer, 2010). In line with Pavlids et al. (2014), the creation of a trustworthy information system is a difficult job, in which the overall trustworthiness of an information system depends on trust relationships that are typically assumed often without adequate justification and the absence of adequate analysis of such relationships or furthermore, adequate justification of relevant trust assumptions may lead to systems that do not completely fulfill their purpose. Therefore, it is critical that trust relationships between the system and other entities and assumptions, typically made during the development process, are properly defined and evaluated to engender system trustworthiness.

Early analysis helps in choosing suitable control measures to cost-effectively and proactively manage certain threats and risks (Pavlids et al., 2014). We suggest that (i) respect for a buyer, business autonomy is considered as one of many fundamental ethical principles; and (ii) honesty in dealing and a willingness to keep promises are corollary principles. Therefore, it is hypothesised:

H3: Disclosure Expectancy (DE) will positively influence Organisational Effectiveness (OE).

3.4. Governance Expectancy (GE) → Organisation effectiveness (OE)

Good governance is vital to the success of a business. The expectation is that a B2B business will establish a good governance process by using technology for a positive impact on OE. Research suggests that OE represents the standards of timeliness, accuracy and various models with diversified parameters by representing a variety of values and interests that exist to measure OE (Walton & Dawson, 2001). OE needs to integrate risk mitigation, which could overshadow risk optimized decision taking (Sparrow & Cooper, 2014). There is a strong correlation between OE and aspects of excellent governance, such as corporate culture, management style and enterprise risk management (Taylor, 2000).

A congenial culture is important in fostering OE and good governance (Mufeed & Rafai, 2007). One possible tool for improving the OE is a call for greater transparency and better governance (Mueller, 2007). The effectiveness of governance influences OE (Brown, 2005; Herman & Renz, 2004). As organisations use automated information technology systems to process their information to better serve their customers, risk management plays a critical role in protecting the information assets of an organisation, and a key objective of the risk management process should be to protect the organisation and its ability to carry out its automated task (Stoneburner et al., 2002). Risk management procedures include relevant information to track the changes that could affect the well-being of the company (Arnold et al., 2011). Corporate governance is concerned with ensuring transparency, building credibility and ensuring accountability, as well as maintaining an efficient information disclosure channel that boosts good corporate performance, and faithful adoption of practices of corporate governance lead to efficient OE (Anuku & Olannye, 2014; Rana et al., 2021; Simintiras et al., 2014).

Indeed, symmetrical communication leads to a variety of performance metrics, including positive market performance, overall OE, conflict resolution, crisis management, positive organisational image and positive media visibility (Huang, 2004). We argue that good governance of an organisation helps to (i) reflect the identity, mission, or purpose of the organisation concerning society and its other stakeholders; (ii) increase OE, sustainability, accountability and fairness; (iii) fulfills the organisation’s purpose; and (iv) avoid major incidents. Therefore, it is hypothesised:

H4: Governance Expectancy (GE) will positively influence Organisational Effectiveness (OE).

3.5. Moderating role of ethical work climate (EWC)

EWC determines what good behaviour is and how ethical problems within an organisation should be treated. Research suggests that the concept of EWC has been subject to much research over at least thirty years (Victor & Cullen, 1988; Arnaud, 2010). Rest (1984, 1986) claimed that individuals require four essential psychological mechanisms to participate in ethical acts: moral sensitivity, moral judgment, moral motivation and moral character. Each of these four components of the ethical decision-making process may also be present at the level of the social system (Arnaud, 2010).

Fig. 2. Proposed conceptual model (Source adapted/referred from Zoble & Lehman, 1969; Austin et al., 1980; Wilson & Rappaport, 1974; Reidpath & Allotey, 2006; Victor & Cullen, 1988; Zinko et al., 2007; Mishra & Misra, 2017).
EWC refers to a category of work environment that represents morally implicated organisational policies, procedures and practices (Martin & Cullen, 2006). Although organisations often have a dominant ethical climate, many types of ethical climate tend to coexist within the same organisation (Victor & Cullen, 1988). Communication variables and EWC are interrelated and are input into the stepwise multiple trust regression to separate their effects and verify whether each contributed to the trust variance beyond that of the other variable (Ruppel & Harrington, 2000). We argue that to survive and gain a competitive advantage in this rapidly changing world, B2B organisations should attribute much greater importance to EWC and ethical decision making should be captured in the CC system. When autonomous systems are permitted to communicate with humans, computer ethics is a deciding factor. Therefore, the moderating effect of EWC is observed between PE, FE, DE, GE and OE leading to the formation of the following hypotheses:

H5a: The Ethical Work Climate (EWC) moderates the relationship between Purpose Expectancy (PE) and Organisational Effectiveness (OE).

H5b: The Ethical Work Climate (EWC) moderates the relationship between Fairness Expectancy (FE) and Organisational Effectiveness (OE).

H5c: The Ethical Work Climate (EWC) moderates the relationship between Disclosure Expectancy (DE) and Organisational Effectiveness (OE).

H5d: The Ethical Work Climate (EWC) moderates the relationship between Governance Expectancy (GE) and Organisational Effectiveness (OE).

3.6. Organisational effectiveness (OE) → Organisational reputation (OR)

From a public perspective, it is important to be aware of what drives an organisation’s reputation for effectiveness and a greater understanding of these elements may increase the efforts of sellers to establish organisational views of buyers over time. Research suggests that perceptions of effectiveness, based on subjective viewpoints, play a key role in justifying public funding and attracting other scarce resources (Forbes, 1998; Sarstedt & Schoderer, 2010) and the reputation for subjectively informed effectiveness has a significant influence on stakeholders’ real support actions (Willems et al., 2014). Organisational reputation is an asset that leads to the positive outcomes for the company (Boyd et al., 2010; Highhouse et al., 2009) and is built through accurate perceptions of advisory networks (Krackhardt, 1990) and strong adherence to political behaviours (Ammeter et al., 2002). To achieve an OR that is optimistic, lasting and resilient, managers need to invest heavily in establishing and maintaining good ties with the constituents of their business (Fombrun, 1996).

OR reflects past and current organisational success and demonstrates the ability to produce consistent desired outcomes to various stakeholders and is arguably the single most valued organisational asset, especially when constructive ethical techniques and moral obligation are highly critical in molding the viewpoints from which individuals view OE (Ogunfowora, 2014). Improved OR is an outcome of effective management of organisation-public partnerships and is especially important because it indicates the economic importance of effective public relations practices (Lee & Park, 2013). OR is embedded in the historical actions of the company and OE and affects its relations with its stakeholders (Agarwal et al., 2015).

A breach of ethics will likely result in a company losing public trust, undermine long-term relationships, loyalty to the brand and result in a tarnished image of the OR (Bowen & Zheng, 2015). We argue that OE is the number one determinant in influencing OR and provides a sustained competitive advantage for the seller to attract economically more attractive buyers. OE is perceived to provide more value to OR and encourages the buyers to be more loyal and purchase a broader range of products and services. Therefore, it is hypothesised:

H6: Organisational Effectiveness (OE) will positively influence Organisational Reputation (OR).

4. Methodology

4.1. Data collection and sampling

The source of the data was Indian B2B organisations that sell products in the categories of Ayurveda health and personal care, kitchen and dining, lubricants and oils, car and bike accessories, pouches and bubble wraps, dairy and water, at wholesale prices and in bulk quantities by catering to all size of buyers. Their unique selling proposition was a knowledgeable team, ease of buying and the ability to adapt to changing business environments. Such organisations used social media in branding their products and services, and provided information such as industry tips, industry news and satisfied client stories.

The personal touchpoints are used by the researchers for the identification of B2B organisations. The respondents and their organisation profiles are presented in Table 2. The table shows that 96% of the respondent organisations have been in existence less than five years and 32% employed between 250 and 499 people. The table also shows that 97% of the respondents were employed in organisations less than 5 years old and 34% of the respondents were employed in organisations with 250–499 employees. The authors interacted with those organisations that were readily available to participate in the study. Convenience sampling was the only option available to the authors for data collection. The convenience sampling approach has been widely accepted and is cost-effective (Ruhl, 2004). A total of 60 B2B organisations agreed to participate. However, two did not submit in time, three did not fill out the survey completely and five did not fill it in correctly. Therefore, a total of 50 valid organisational responses and 300 valid respondents’ responses were considered for further analysis.

Data were collected through online interviews in two phases: Phase 1 and Phase 2. The pilot study was conducted in Phase 1. The feedback obtained in Phase 1 was used to improve the survey instruments used in Phase 2. Data collection was slow in Phase 1, hence, a more rigorous approach was adopted in Phase 2 to collect the required data. A consent form and information sheet were provided to all respondents who formally agreed to take part in the survey. The interview was conducted over video calls by eight interviewers, who were well trained for conducting the personal interviews in English.

4.2. Measures

A quantitative research methodology was adopted, wherein the five-point Likert scale questionnaire was designed for buyers and data was collected through interviews. The details of the questionnaire are presented in Table A1 in Appendix A. The items of various constructs used in the proposed model have been adapted from various sources.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>B2B organisations and respondents profile.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
<td># of organisations</td>
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<tr>
<td>Employee strength</td>
<td></td>
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<tr>
<td>Less than 50</td>
<td>8</td>
</tr>
<tr>
<td>50–99</td>
<td>1</td>
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<td>100–249</td>
<td>11</td>
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<td>250–499</td>
<td>16</td>
</tr>
<tr>
<td>More than 500</td>
<td>9</td>
</tr>
<tr>
<td>Existence in years</td>
<td></td>
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<tr>
<td>Until 5 years</td>
<td>48</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
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including PE (Ganzaroli et al., 2017; Lennox & Chaplin, 1996; Matthews et al., 2003), FE (Mannion et al., 2006; Myers, 2013; Vila-Henninger, 2015), DE (Clayton, 1997; Vlachopoulos & Michailidou, 2006), GE (Pai & Huang, 2011; Said et al., 2015; Thong & Yap, 1998), OE (Aggelidis & Chatzoglou, 2012; Croteau & Bergeron, 2001; Tung et al., 2008) and EWC (Cullen et al., 1993) and the items of OR (Feldman et al., 2013).

4.3. Research settings

For this empirical study, principles and their features were added to the seller organisation’s digital marketing process and are shown in Table 3. A proof of concept prototype and technology were used to demonstrate the survey’s feasibility and the realisation of the empirical evidence. It was primarily performed to identify the gaps that might interfere with achieving the objective of the study.

4.4. Common method bias

This study was vulnerable to common method bias (CMB), which arises from the fact that it is a self-reported survey, with respondents being asked to respond to a standard scale of constructs and respondents being asked questions that affect both independent and dependent factors simultaneously (Podsakoff et al., 2003). As a result, we used Harman’s single-factor test, which is the most frequent applied method for assessing CMB (Malhotra et al., 2006). According to Harman’s single-factor test, the cumulative variance calculated value of 26.762% was well below the 50% criterion, indicating the lack of CMB. Ideally, for a collection of items, the average inter-item correlation (r) should be between 0.20 and 0.40 (Piedmont, 2014) and our study reported r as 0.236, suggesting reasonably homogenous items.

5. Data analysis and results

Exploratory Factor Analysis (EFA) with IBM SPSS Modeler and Confirmatory Factor Analysis (CFA), Structural Equation Modelling (SEM) with IBM AMOS was used to test the research validity. EFA is a frequently used statistical method for measuring instrument validity (Hoban et al., 2005). In CFA, hypothesised models reflect an approximation to reality (Marsh et al., 1988). SEM is usually used as a structural analysis for the covariance of a model (Cao et al., 2012). Since the study is a factor-based model, AMOS was used. IBM SPSS Modeler is used due to the graphical interactivity of statistical analysis. When SEM is used as a data analysis tool, the sample size of 300 falls within the range between 200 and 400 (Hair et al., 2006).

The results came from a two-step process using a measurement model and a structural model (Anderson & Gerbing, 1988) and the goal was to determine the construct’s validity and reliability before evaluating the proposed model’s structural relationship.

5.1. Measurement model

With factor loading (FL), average variance extracted value (AVE) values of more than 0.5 (Hair, Anderson, Tatham, & Black, 2006) and Cronbach’s alpha (CA), composite reliability (CR) values of more than 0.7 (Fornell & Larcker, 1981), convergent reliability of all the factors considered in the measurement model was reached. Table 4 represents CA, CR, AVE of the constructs and FL of items. The table shows the constructs used in this research that have CA and CR values of more than 0.7, with factor loading and AVE value of more than 0.5. Therefore, it is concluded that the factors in the measurement model are reasonably reliable and the requirements for the convergent validity criteria have been met.

The correlations among all constructs should be below 0.85 thresholds to avoid multicollinearity (Kline, 2015). Table 5 indicates that in the corresponding rows and columns all diagonal elements were higher than the off-diagonal elements and all estimates of inter-correlation were below 0.734, thereby demonstrating discriminant validity.

5.2. Structural model

The p-value of less than 0.05 is considered to be statistically significant and the hypothesis is therefore supported (Grabowski, 2016). Table 6(a) captures the summary of direct effect and justified the support for H1, H2, H3, H4 and H6. Table 6(b) captures the summary of the moderator’s (i.e., EWC) effect and justified the support for H5a, H5b, H5c and H5d. In the corresponding table, *** represents the p-value of less than 0.001.

The path coefficient (β) describes the hypothesised relationship between dependent and independent variables. The result of the SEM path and R² in Fig. 3 shows that the R² value of OE is 0.60 and OR is 0.40 and the β of PE → OE is 0.60. Table 7 shows the model fit indices and is considered to be an excellent fit.

6. Discussion

The key objective of this research was to validate the alignment of ethical issues in CC in B2B digital marketing business-centric ethical challenges to achieve improved OR. Through the empirical analysis of data, the study found improved OE (R² value of 0.60) and OR (R² value of 0.40). The validity of RQ1 was met with the support of H1 to H5, RQ2 was met with the support of H6 and RQ3 was met with the support of H5a to H5d. With the validity of RQ1, the research gap on (i) core ethical principles of CC and (ii) alignment of ethical issues of CC to B2B digital marketing business-centric ethical challenges is achieved. With the validity of RQ2 and RQ3, the research gap on improved OE and OR is bridged. Hence, digital marketers need to incorporate effective business-centric ethics in their digital marketing initiatives to realise the image that the business wants to portray. In addition, it is recommended to incorporate CC ethical practices into B2B digital marketing practices to
improve OR, because ethical work climate influences ethical decision-making.

Concerning the current gap in organisational ethics, the study suggests how B2B should respond to digital marketing business-centric ethical challenges by aligning the business to core ethical principles of CC to achieve improved OE and OR. Therefore, this study validates perceptions regarding the importance of ethics with the previous studies (Etheredge, 1999; Kraft & Singhapakdi, 1991; Singhapakdi et al., 1994) on OE, and our findings are consistent with those studies i.e., ethics plays a key driver of organisational effectiveness. Similarly, other studies (Agarwal et al., 2015; Ogunfowora, 2014) focused on OR and our findings are consistent with those i.e., ethics and corporate leadership tend to be predominant drivers of organisational reputation because of the growing prevalence of corporate scandals in society today. To summarise, no B2B business should adopt any unfair practices in their digital marketing practices if they want to earn pride and honour.

In addition, the study analysed each CC ethical principle against the backdrop of the empirical results and highlights the findings which warrant discussion.

**Purpose:** The study observed, (i) B2B sales opportunities in many cases become derailed due to a failure to identify all key stakeholders and to meet the ethical demands of each stakeholder group. A strong business ethical environment leads to better interaction with stakeholders and better interaction leads to better results. (ii) Lead generation, lead nurturing and lead scoring are the individual tasks of a typical B2B digital marketing program, which the buying business should truly value and should help the selling business to learn and assist in achieving end-to-end ethical goals. This finding is inline with (Stahl et al., 2021) i.e., the most important purpose of ethical considerations is to increase the efficiency and effectiveness of sales processes. This adoption of ethical practices results in increased quality revenues and reduction of organisational ethical challenges.

**Fairness:** The study observed (i) B2B buyers are mainly involved in rational decision making and are rarely affected by emotional factors, thus, such buyer’s sensitive attributes deserve privacy and whether enough attention is paid to such buyers depends purely on the ethical guidelines of the business. (ii) Most of a selling business is driven by the data but many struggle to properly measure their success due to confusion surrounding ethics-related marketing metrics. Knowing which metrics to measure is vital to success and without it business encounters continual problems. This finding is inline with (Schminke et al., 2015) i.e., ethical values serve as a foundation for making fair judgments, which in turn serve as the foundation for action and practice. Calls to action in B2B digital marketing should not be one-size-fits-all and the best practices with no ethical challenges to be followed to deliver on its promise.

**Disclosure:** The study resulted in two observations. (i) Many participants pointed out that the use of technology does not automatically lead to any degree of trust in the technology because they were unaware of any possible adverse effects or chose to ignore them, or because they
have no other options. Therefore, there is a need for the identification of usage and potential limitations. (ii) A stakeholder analysis is required to the convenience that the trust train should leave the station in-time. The finding is inline with (Kolotylo-Kulkarni et al., 2021) i.e., because disclosure is important for business, its critical to understand why, how, and with what results B2B participants choose to reveal their information. The disclosure is necessary to prevent deception.

Goverance: The study observed (i) vulnerabilities primarily arise from flaws in the code and insecure data transmission. Face time vulnerability enabled marketing practitioners to eavesdrop on the audio of unanswered group chats. (ii) CC is still in its infancy and there is plenty of scope for further development. However, human oversight will always be essential. The finding is inline with (Khati & Brown, 2010) i.e., data and information governance describe ways to cover societal activities. Trusted data governance is essential for contact and account intelligence. B2B organisations require consistent, unified, and always up-to-date information about both people and buyers that is accessible across all its systems and platforms.

7. Theoretical implications

This study yields major theoretical implications. First, it integrates Hunt-Vitell theory, Influential Computer Ethics theory, Ethical Climate theory, Cameron’s theory and Organisational Reputation theory to formulate an integrated theoretical framework termed ‘Cognitive computing enabled B2B ethical digital marketing’. This theory provides a complete and accurate explanation of how ethical principles in cognitive computing can be applied to B2B digital marketing business-centric ethical challenges to improve both organisational effectiveness and organisational reputation.

Second, the ethical work climate construct is related to purpose expectancy, fairness expectancy, disclosure expectancy, governance expectancy and organisational effectiveness constructs through moderating characteristics. Therefore, it extends the influence on business’s ethical decision-making.

Third, this study ‘connects the dots’ of organisational effectiveness and organisational reputation. The main source of an good organisational reputation is a well-built organisational effectiveness that develops the B2B digital marketing unique from the identity-shaping business-centric CC ethical practices that are maintained over time. This leads a B2B business to be credible, reliable, responsible and trustworthy, leading to an increase in organisation activity and sustainable economic value.

Finally, the ethical principles underpinning the CC should be translated into a computerised model guided by the desired design and implementation of the CC system. For governance, the development of computerised models and the operation of CC systems should be organised in a clearly defined DevOps life-cycle, as shown in Fig. 4.

The DevOps is the development and operation life-cycle approach for CC ethical principles and represents the integration of the development (dev) and operation (ops) stages. Each stage progresses in a sequential fashion. The dev stage has four phases: plan, code, build and test, and the ops stage also has four phases too: release, deploy, operate and monitor. The dev stage is characterised by the development and testing of the computerised model of ethical principles and the ops stage ensures the quality attributes of ethical principles. The activities of the dev stage are (i) CC task definition and hypothesis formulation (i.e., generate CC task definition and hypothesis formulation to choose the ethical specification to address B2B business-centric ethical challenges); (ii) data collection and preparation (i.e., ensure the data’s validity, remove or reduce the bias); (iii) computerised model design and training (i.e., design the computerised model and perform the training), (iv) computerised model testing and verification (i.e., check whether the computerised model satisfy the CC task); and (v) hypothesis testing and verification (i.e., check whether the computerised model satisfies the ethical specification to address B2B business-centric ethical challenges). The activities of the ops stage are to ensure the quality attributes such as flexibility, testability, usability, efficiency, maintainability, reliability, reusability, security, portability and interoperability of CC ethical principles.

8. Managerial implications

Our results have some significant practical implications and will be especially useful for B2B marketing practitioners. First, the current research provides insights for B2B marketers and executives who may be interested in taking advantage of technology and explains why attention should be paid to the digital marketing strategy to help achieve the improved organisational reputation (Cartwright et al., 2021; Gök et al., 2015). However, the greatest promise will be realised by building a self-improving CC system, i.e., given a sufficient volume of data and business-centric ethical principles, the system can better satisfy the needs of the marketers and executives over time by measuring organisational reputation using (Bremser & Chung, 2005) both lagging and leading indicators. A lagging indicator will confirm an organisation’s reputation based on the result of past actions and a leading indicator will predict organisation’s effectiveness in terms of both short-term and long-run goals. Evaluating these leading indicators and understanding how the business actions correlate with future performance, practitioners can have a good idea of how effective an organisation will be in the future and what steps will be necessary to achieve such effectiveness.

Second, little is yet known about the views of the marketers regarding the value of ethics in business decisions (Campbell et al., 2020; Singhapakdi et al., 1994), so executives and other practitioners should participate in CC system development. Women are generally more attached to the notion that ethics are determinants of increased organisational effectiveness (Murray & Zhang-Zhang, 2018; Singhapakdi et al., 2001), so they should provide input to CC systems’ development. Although CC dramatically improves quality in the digital marketing space, its effect on jobs and the workforce will have many social and economic consequences (Helbing, 2019; Walsh, 2018; Zanzotto, 2019).

Third, another major concern about CC is the ethical and legal concerns related to the development of human replicas or intellect (Adamson et al., 2019; Kanuck, 2019; Winfield, 2019). The organisational culture influences the members of each organisation in terms of people interaction, confidence, cultural understanding, team cohesion and achievement of goals and thus increases their overall performance and productivity. Therefore, it is too difficult to employ and develop a human workforce and CC workforce on the same platform (Brougham & Haar, 2018; Yu et al., 2019).

Finally, a rising number of businesses are implementing technological efforts with the goal of automating or improving important business operations in order to obtain a competitive edge (Duan et al., 2019). Therefore, to maintain a competitive edge in a fast-growing marketplace, B2B organisations increasingly need to look for proactive ways to harness new CC enabled principles and comprehensive sources of ethical issues in distinctive ways to increase organisational reputation. Ethical issues such as (i) negative content i.e., appeals to fear, demands for remorse, etc; (ii) advertisements aimed to children i.e., controversial items such as alcoholic beverages, tobacco, or illegal drugs, etc.; (iii) puffery i.e., exaggerated claims, etc. to be dealt with carefully to avoid damaging organisational reputation.
9. Limitations and future research directions

Like any research, this study also has some limitations. First, a small set of data was considered for this study and the primary data was collected from B2B organisations operating in India (Chatterjee et al., 2021). B2B digital markets are gradually maturing across much of the world, whereas in India they are still in the nascent stages. Second, in India, digital marketing efforts are primarily centered around digital lead generation and, for this reason, the role of digital marketing strategy is to attract and convert the highest quality leads. Therefore, such B2B organisations usually do not proactively incorporate business-centric ethical justice challenges into their digital marketing strategies, so this study could not establish business-friendly and face-savvy moderating factors with the interlocking of CC core ethical principles and digital marketing ethical challenges. Third, for CC to be used to its maximum potential, it must be founded on trust, wherein all B2B stakeholders must trust the technology’s ethical principles and its results. Due to a scarcity of data, the study could not establish any correlation between CC ethical principles and distrust.

Future research agenda could address other limitations, and we propose better selection of sample data, mapping the landscape of organisational effectiveness theory and B2B digital marketing ethics theory and considering the correlation between CC ethical principles and distrust in the future work. First, while the theoretical framework is expected to be generalisable, the outcomes would have been better if the data collection had been conducted at mature B2B businesses operating in more developed countries.

Second, mapping the landscape theory can be established to map the landscape of B2B digital marketing issues to the landscape of CC core ethical principles for increase organisational effectiveness in the category: (i) in the spirituality of ‘what is CC’: digital marketing issues to address include bias and fairness, accountability and remediability, transparency and interpretability; (ii) in the spirituality of ‘what CC does’: digital marketing issues to address are safety, human-CC interaction, cyber-security and malicious use; (iii) in the spirituality of ‘what CC impacts’: digital marketing issues to address impact on civil rights, and human–human interaction. B2B digital marketing ethics theory can be established in the category: descriptive ethics defining the ethical standards, normative ethics explaining how to act according to ethical standards and technology ethics addressing the relationship between technology and normative ethics such as data ethics, AI ethics, IoT (Industrial IoT) ethics and robot ethics.

Third, there is much more to say about ethics and trust, and in this digital world every B2B must become a learning organisation. There will be some failures when technology becomes transformative. Those businesses that cannot learn from failure will not survive. Hence, B2B must pick effective metrics to track trust scores that allow for good results and have realistic standards for progress to lead to improved organisational reputation. When the score deteriorates over time, the trust slips and then, questions can be developed and answers can be collected to iron out the digital marketing issue within the digital marketing team.

10. Conclusion

We have proposed an integrated theoretical framework termed ‘CC enabled B2B ethical digital marketing’ to demonstrate the application of CC ethical practice and address CC ethical concerns in B2B digital marketing based ethical challenges to help improve organisational reputation. In particular, we discussed B2B digital marketing based ethical challenges and the four ethical principles of cognitive computing: purpose, fairness, disclosure and governance to structurally link with organisational effectiveness and organisational reputation. Organisational effectiveness ensures that an organisation has ethical policies and processes that are coupled with well-designed information system practices for handling bottlenecks. Organisational reputation is vital for attracting loyal customers, increasing investor appetite facing greater risk or lower return, the growth of the business and making it more profitable. The adoption of ethical practices is vital for buyers to feel safe in digital relationships in this ever-growing digital marketing landscape, but a moral slip in how business is transacted may arise if sellers disregard ethical principles. In particular, the research contributes to the B2B, marketing, ethics and information systems literature by the application of CC ethical practices and by addressing CC ethical concerns inherent in B2B digital marketing business-centric ethical challenges.

CRediT authorship contribution statement

Rajat Kumar Behera: Article development, investigation and data collection. Pradip Kumar Bala: Reviewing and editing, Supervision, Investigation. Nripendra P. Rana: Reviewing and editing, Supervision, Investigation. Hatice Kizgin: Writing – review & editing, Validation, Supervision, Investigation, Formal analysis.

Declaration of Competing Interest

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

Appendix A

Five-point Likert scale questions (1: Totally disagree, 2: Disagree, 3: Neutral, 4: Agree 5: Totally agree) are captured in Table A1 and were asked to the ‘digital marketing head’ who owns planning and the ‘marketing practitioner’ who executes digital marketing strategies. The scope of cognitive computing falls into ML and neural network techniques for the survey. The objective is to check for improved organisational effectiveness and organisation reputation.
To handle business-centric ethical challenges in B2B digital marketing, impacting the buyer-seller relationship:

**Purpose Expectancy (PE)**
- PE1: Relying on data, cognitive computing suggests better decisions.
- PE2: Cognitive computing ethical principles are ruthless to optimise the goal.
- PE3: Cognitive computing addressed issues involving vulnerable groups.

**Organisational Effectancy (OE)**
- OE1: I trust in cognitive computing process.
- OE2: The cognitive computing principles are a pleasant experience.
- OE3: I really want to use cognitive computing principles to improve OE.

**Fairness Expectancy (FE)**
- FE1: Cognitive computing avoids discrimination against sensitive features.
- FE2: Cognitive computing avoids entrenching historical disadvantage.
- FE3: Cognitive computing operates within the boundary for judgment.

**Disclosure Expectancy (DE)**
- DE1: Cognitive computing respect for autonomy.
- DE2: Cognitive computing gives friendly human explanations of its decision-making process.
- DE3: Cognitive computing reveals sufficient information to stakeholders for informed decision making.

**Governance Expectancy (GE)**
- GE1: Cognitive computing is safe, effective, and functional.
- GE2: Cognitive computing ensures responsibility and accountability.
- GE3: Cognitive computing is trained with ethical guidelines.

**In reference to the business-centric ethical challenges in B2B digital marketing, impacting the buyer-seller relationship:**

**Ethical work climate (EWC)**
- EWC1: For me, an effective way is always the right ethical manner.
- EWC2: I am supposed to do whatever is ethically best.
- EWC3: I should not be involved in the misuse of the principles of cognitive computing.

**Organisational Reputaion (OR)**
- OR1: I maintain a good relationship with organisational effectiveness practices.
- OR2: I practice standards in ethics.
- OR3: I want to use organisational effectiveness practices to generate positive feelings.

**References**


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