Moving from a compliance-based to an integrity based organizational climate in the food supply chain

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ABSTRACT:

Compliance is the act or status of complying with an imperative regulatory or normative requirement i.e. compliance means working within boundaries defined by contractual, social or cultural standards. The aim of this narrative review is to use the food supply chain as a lens of enquiry to distinguish between compliance based and integrity based organizational climates and frame and rationalize why deviant behavior arises and how it can be identified. Contemporary theory is explored and critiqued using case studies to contextualize the challenge of organizations promoting supply chain compliance and at the same time recognizing the need for deviant behavior to occur in order to drive innovation and continuous improvement within food supply chains. Deviant behavior can be perceived as either positive in terms of driving continuous improvement or destructive where this behavior has a negative impact on the organization. Whilst multiple cultural maturity models seek to characterize positive food safety culture and climate, there is minimal research that focuses on the characterization of deviant negative behavior or the development of early warning systems designed to pinpoint signals, traits or characteristics of this behavior such as low staff morale, theft, property destruction or absenteeism. The use of cultural maturity models and assessment tools is of value in assisting organizations to translate from a rule, instrumental or compliance-based organizational climate to an ethically strong organizational climate that focuses on integrity, building trust and values and a new model is proposed and explored.

Keywords: deviant, negative, behavior, climate, organizational,

1. **Introduction**

1.1 Compliance

The term ‘compliance’ is used widely in business literature. At its simplest, compliance is the act or status of complying with an imperative standard which can be a regulatory requirement (law, or legal standard), or a normative requirement i.e. based on contractual, social or cultural standards. Compliance as a status can be internally determined (first party assessment) i.e. an organization checking itself or alternatively externally second party by of a supplier or by a customer or third parties e.g. via verification activities of certification bodies. Compliance is the act of meeting multiple requirements and procedures that can be internally or externally defined (Amundrud & Aven, 2015). Thus compliance behavior is the attitude toward and intention to follow or willingness to comply with a prescribed set of rules or norms that influence an individual (Lu, Sadiq & Governatori, 2008) and/or the collective behavior within an organization.

Organizational norms, the informal or formal rules that regulate and regularize compliance behavior are usually prescribed in policies, protocols, procedures, rules or job descriptions (Bennett & Robinson, 2000; Mertens, Recker, Kummer, Kohlborn, & Viaene, 2016) and underpinned by a formal management system (Nanyunja et al., 2016). However, continuous improvement requires an organization not just to comply with stated requirements, but instead to implement a formal management system that drives delivery of strategic goals that are based on improvement and greater operational efficiency (Aven & Krohn, 2015). Aven (2015) argues that there is no perfect management system and system failure will always occur so organizations that wish to produce consistently safe product need to look beyond simply complying with regulatory, organizational and market system standards as an end in itself, and instead to make sure their management systems evolve, are agile and can adapt and change. Indeed post-event incident analysis shows that both lack of knowledge and ignoring of warning signals will ultimately lead to system failure (Marvin, Kleter, Frewer, Cope, Wentholt & Rowe, 2009; Aven, 2015). Therefore ante-event early warning rapid alert systems are of value to alert organizations about potential issues in real time in order to prevent non-compliance from occurring (Marvin et al., 2009).

1.2 Integrity

Food systems and extended, fragmented supply chains are shaped by complexity and the dynamic interactions between numerous inputs, processes, resources, outputs, and actors that can all affect supply chain and personal integrity (Wang, Van Fleet & Mishra, 2017). Integrity is the reputation for truthfulness and

honesty and also assurance that a person's behavior is consistent with their espoused values (Butler & Cantrell, 1984; Yukl & Van Fleet, 1992). Kendall et al. (2018) describe integrity as "the reliability, trustworthiness, transparency, morality and ethical conduct of actors and stakeholders in the food supply chain." Lord, Spencer, Albanese, & Elizondo (2017, p. 499) propose that for integrity to be present in supply chains there needs to be a redefinition of the "responses, actions and preferences of market actors to external pressures and drivers around ethical practice." Therefore food integrity as a research area has legal, moral and ethical dimensions (Manning, 2017a). Written in the aftermath of the 2013 European horsemeat incident, the United Kingdom (UK) Elliott Review (2014) into the integrity and assurance of food supply networks stated that food integrity was not only concerned with the nature, substance, quality and safety of food, but also captured other aspects of food production such as "*the way it has been sourced, procured, and distributed and being honest about those areas to consumers*". Wang et al. (2017) argue that food integrity as a holistic concept requires all food supply chain actors to be accountable for their actions especially during "dynamic transformations and integration processes." (see Table 1 for further definitions in the literature of food integrity).

Take in Table 1

Food integrity in food supply chains can be distinguished between product integrity, process integrity, people integrity and data integrity (Manning, 2016; 2018; Manning & Monaghan, 2019). People integrity can be described as the honesty and morals exhibited by an individual or collective group, whilst data integrity describes the validity and veracity of information accompanying the food item throughout the supply chain i.e. that such data is accurate and representative through the food product life-cycle (Manning, 2016). Davidson et al. (2017, p.56) identifies the transactional elements of product integrity stating that it encompasses "food safety, security, traceability, origin authenticity, quality attributes and product information." Therefore, product integrity reflects the intrinsic attributes of a product in order to show that it is compliant with a product specification that has been agreed and expresses the total completeness of a product that is "undiminished, without removal of part" (see Sykes 1976) or any further addition. Whilst monitoring and verification of product integrity requires the development of product testing programmes within a food integrity management system, verification of process integrity requires the assessment of objective evidence of how the product and its inherent ingredients have been produced e.g. documentation, product and process certification and traceability data (Manning & Monaghan, 2019). Therefore the assurance of food safety, quality, and legality of

food products underpins both brand integrity, equity and trust (Kleboth, Luning & Fogliano, 2016), and also creates an open and transparent supply chain network (Soon, Manning, & Smith, 2019).

1.3 Summary

Food supply chain standards that focus on compliance with prescribed product and process requirements alone will not assure food integrity (Esteki, Regueiro & Simal-Gándara, 2019) as compliance alone does not assure that other aspects of integrity such as accountability, trust and honesty are also addressed. Also, where these standards drive additional product and process compliance costs, this may be a burden and a barrier to market access for businesses e.g. via the need for third party certification especially to access value added supply chains (Hou, Grazia & Malorgio, 2015). These compliance costs can include investment in human and physical capital, although in some cases this is offset by increased revenue, productivity and competitive advantage (Hou et al. 2015).

The aim of this narrative review is to use the food supply chain as a lens of enquiry to distinguish between compliance based and integrity based organizational climates and frame and rationalize how deviant workplace behavior arises. Case studies are used to explore the theory and provide clarity of meaning. Deviant workplace behavior can be a positive process driving innovation and emergent best practice or can be negative and be a threat to the organization or the wider supply chain. Deviant workplace behavior in this research is defined as non-compliance by an individual or multiple actors with prescribed requirements or standards. As a result of this behavior, their actions go beyond or against existing role expectations and violate organizational norms (Yildiz & Alpkan, 2015). The paper is structured as follows: Section 1 is the introduction; Section 2 compares compliance based and integrity based management systems. Section 3 explores constructive deviant behavior and its impact on promoting innovation and continuous improvement. Section 4 reflects on the positive and negative impact of the cultural dimensions of individualism, collectivism, masculinity and power distance to inform Section 5 that critiques destructive deviant behavior in organizations and then the impact of toxic organizational climates. Section 6 compares and contrasts the mechanisms for determining cultural maturity and Section 7 provides concluding thoughts from the literature review and evidence of research gaps.

2. Compliance based and integrity based management systems

2.1 Compliance behaviour

Compliance behavior can be driven by personal engagement in organizational citizenship behavior or self-interest (Hofeditz, Nienaber, Dysvik, & Schewe, 2017) i.e. concern over the personal risk of organizational or regulatory sanctions (Muloi et al., 2018). Paine (1994, p111) distinguishes between extrinsic (legal) and intrinsic (values based) motivators of compliance behavior stating:

> "While compliance is rooted in avoiding legal sanctions, organizational integrity is based on the concept of self-governance in accordance with a set of guiding principles…. [the task] .. is to define and give life to an organization's guiding values, to create an environment that supports ethically sound behavior, and to instill a sense of shared accountability among employees."

Organizational citizenship behavior reflects how an individual demonstrates discretionary behavior that is neither directly nor explicitly recognized by a formal reward system. Instead the effective functioning of the organization is promoted through five distinct cultural dimensions: altruism, courtesy, civic virtue, conscientiousness, and sportsmanship (Organ, 1988). The cultural framing described here drives an organization from exhibiting purely transactional, reactive and tactical behavior to instead being transformational, proactive and strategic in their activities (Manning, 2017b; Manning, Luning, & Wallace, 2019). Integrity based management systems focus on values and ethics. Becker (1998) considers that integrity is not only about compliance or adherence to standards defined externally by other stakeholders outside the organization. Becker (1998, p. 157) states:

> "Integrity requires more than adherence to some arbitrary set of values (personal integrity) and more than adherence to a set of values acceptable to some other individual or group (moral integrity). Integrity is commitment in action to a morally justifiable set of principles and values, where the criterion for moral justification is reality not merely the acceptance of the values by an individual, group, or society."

Thus, integrity is an active, conscious approach by an organization to define what it is to be moral rather than simply accepting the values and often prescriptive standards of the supply chain. The different characteristics of compliance-based and integrity-based management systems are compared in Table 2.

Take in Table 2

To demonstrate the difference between compliance based and integrity based approaches the "Southampton artificial colors" example will be used. In 2007, research was published by Southampton University linking hyperactivity in children to consumption of colors and/or sodium benzoate (McCann et al., 2007). The colors concerned were: tartrazine (E102), quinoline yellow (E104), sunset yellow (E110),

carmoisine (E122), ponceau 4R (E124), and allura red (E129). The Food Standards Agency (FSA) requested the voluntary removal from food and drink in the UK and determined a requirement for caution labelling to be placed on products that contain these colors. Thus, an organization had two options in the light of this requirement. Firstly an organization can follow a compliance based approach and continue to use these colors within legally prescribed limits within their food product if the packaging is suitably labelled. Alternatively, an integrity based approach would consider what is morally justifiable and seek to use alternative natural and nature identical colorants both in existing products and in new product development and it is this later approach that many organizations in the UK food industry have taken. This example highlights how normative supply chain ethics originate and then evolve in the food supply chain.

2.2 Normative supply chain ethics

Business ethics extend beyond what is simply legal or illegal practice. Business ethics can be described as the standards, codes, protocols or rules that position guidance as to what is morally right or wrong behavior and truthfulness in specific situations (Lewis, 1985; Fischer, 2004). Normative ethics define prescriptive, market driven standards, rules and protocols for right or proper conduct in the food supply chain and are based on moral evaluation of how people ought to act. Normative ethics frame market driven standards, rules and protocols especially when focused on business issues. Normative industry standards e.g. International Organization for Standardization (ISO) standards or more specific food supply chain standards such as GlobalGAP or Global Food Safety Initiative (GFSI) benchmarked standards encourage compliance (Shnayder, Van Rijnsoever & Hekkert, 2016). Indeed, Lebaron and Lister (2015, p. 908) argue that supply chain verification activity, including auditing, “ultimately disguises a normative, market-based policy agenda in seemingly objective tools and metrics.” They determine even though compliance audits are seen as neutral and objective, there is an underlying politicization of audit design, audit scope and the outsourcing of the verification process to third parties by corporate interests. As can be seen with the GFSI benchmarking equivalence process, this industry approach creates isomorphism promoting a common set of normative values and rules, and as a consequence leading to similar practices and organizational structures across supply chains (Othman, Ahmad & Zailani, 2009; Manning et al. 2019). Isomorphism is the continuous and mutual adaption towards a normative ommon cstandard and can be driven by organizations mimicking others to create better success or to reinforce their level of legitimacy (Amran & Haniffa, 2011; Czinkota, Kaufmann & Basile, 2014). Isomorphism as a

continuous and mutual adaption (Czinkota et al. 2014) can develop as a result of singular elements, or a combination of three elements, that Joseph and Taplin (2012) argue operate in an integrated way:

Norman (2011, p46) argues that there is a normative asymmetry that can occur between firstly the justificatory tools for setting compliance levels e.g. the minimum standards defined by laws, regulations and standards that must be complied with and the justificatory tools for moving beyond compliance towards integrity based management systems. This normative asymmetry is mediated by organizational climate.

2.3 Organizational climate

De Boeck et al. (2015) argue culture is composed of two elements; one is the techno-managerial element distinguished by the management system and its operation (Luning & Marcelis, 2006; 2009) and the second element is the human element i.e. the climate in which the management system operates. Universalism positions that all organizational cultures are underpinned by the same value-set, but in practice, moral framing and cultural surroundings influence individual and organizational decision-making (Robertson & Fadil, 1999) so specific organizational cultures influence the organizational climates that contextualize ethical behavior. Organizational climate has been described as a set of characteristics that describe an organization and can distinguish that organization from other organizations, are characteristics that endure over time, and characteristics that influence the behavior of people in that organization (Forehand & Von Haller, 1964; Lee, Almanza, Jang, Nelson, & Ghiselli, 2012). Manning, M.L., Davidson and Manning, R.L., (2005) identify four dimensions of organizational climate, these being: (a) leadership facilitation and support; (b) professional and organizational spirit; (c) conflict and ambiguity; and (d) workgroup cooperation, friendliness, and warmth. One set of antecedents to the organizational climate, i.e. events or incidents that influence a given behavior, are the ethical climate, ideology or orientation of the organization. Hamilton-Webb et al. (2017) note that antecedents are shaped by the consequences of previous experience(s) i.e. that individuals will exhibit a particular behavior based on the consequences that occurred when they exhibited that behavior in the past. Antecedents that strongly correlate with integrity based management systems include fair and transparent rules in an organization's relationship with its employees and other stakeholders; the level of organizational contribution to its local community; and the efforts made to build trust and a positive atmosphere within the organization and to reduce the negative impact of organizational activities on the natural environment (Karaszewski & Lis, 2014). Thus antecedents will form and situationally shape the organizational climate.

A typology of organizational climates can be developed based on existing literature (Victor & Cullen, 1987; Appelbaum et al. 2005; 2007). Six characteristic climates emerge the first two being: the caring climate focused on benevolence and a genuine interest in others; and the independence climate where employees are strongly guided by their own sense of right or wrong. The efficiency climate focuses on organizational behavior that is the most efficient; and the instrumental climate exists where employees act based their own self-interest often to the detriment of others and the organization itself. The professional climate occurs where the employees are principle based and compliance focused following the rules and guidelines set out by their professional organization or the laws set out by government. In this culture employees look outside the organization for cues concerning how to behave ethically. Finally, the rules based climate is where workers are expected to be compliance focused and strictly follow the internal rules, protocols and procedures of their department or organization (see Table 3).

Take in Table 3

Victor and Cullen (1987) developed the Ethical Climate Questionnaire (ECQ) in order to assess the ethical dimensions of organizational climate using nine theoretical dimensions that differentiate within this typology (Table 4). This ECQ approach operates at three levels the individual (micro-level); the local (meso-level) and the wider environment in which the business operates (macro-level). The use of this triple locus of analysis (macro-meso-micro) can be seen in a number of studies that focus on organizational culture in the food supply chain (Luning, Marcelis, van Boekel, Rovira, Uyttendaele, & Jacxsens, 2011; Kirezieva, Nanyunja, Jacxsens, van der Vorst, Uyttendaele, & Luning, 2013; Nayak & Waterson, 2016; Kirezieva, Jacxsens, Hagelaar, van Boekel, Uyttendaele, & Luning 2015; Manning et al. 2019). This means that multiple climate characteristics can exist and can be exhibited within the same organization at the same time and at different loci of analysis. This creates a challenge when seeking to assess organizational climate and whether the method of analysis itself is representative and whether it provides a surface or a deep level of assessment. The three ethical criterion used in the ECQ framework are self-interest (egoism); benevolence (greatest good for the most people) and principle (adherence to standards and procedures i.e. being compliance focused).

Take in Table 4

One of the challenges with mapping organizational climate with a tool such as that described in Table 4 is that depending on the issue (food safety, worker welfare, environmental impact and so forth) and the level within the organization where the tool is being used (senior management, middle management, workers) the

organizational climate map that is produced may vary and be subject to dynamic change. As the status quo is often used cognitively as a reference point, and especially so in compliance based systems, the properties of any alternative behavioural responses e.g. moving from a viewpoint of self-interest and/or principle to benevolence, is always assessed relevant to the current situation (Kahneman, 2003). Indeed, behavior that questions the status quo, especially where this is principle or self-interest based, can be perceived as negative, destructive behavior or alternatively as a constructive challenge to existing rules, principles and standards (Hofeditz, Nienaber, Dysvik, & Schewe, 2017), social norms and assumptions and a means to address existing power inequalities (Wolf, 2018). Thus the organizational status quo can in itself be a normative barrier to change. Whilst this can be beneficial if the status quo focuses on positive behavior, it can prove detrimental to the organization if the status quo focuses on self-interest and profit at any economic, environmental or social cost. Thus constructive, deviant behavior is of value in any organization especially if it drives innovation and organizational resilience.

3. **Constructive deviant behavior**

Habitus is the set of assumed, often fluid, socially learned attitudes and ways of acting which develop over time as a result of experiences (antecedents) that operate at an unconscious level and influence what we believe is our role and position within a given social environment (Bourdieu, 1990; 1991; 1993; Wolf, 2018). Habitus helps people make sense of their often complex world. Habitus mediates between an individual's consciousness and dispositions and the structural elements of society in which they find themselves i.e. the work organization, the wider food supply chain and the external societal environment (Hollingworth, Mansaray, Allen, & Rose, 2011). Habitus is the socialized norms that guide behavior and thinking (including attitudes and intent) influencing the identity, actions and choices of an individual (Bourdieu, 1990). Different sub-cultures in a given organization or across a supply chain may have a different sets of socialized norms that are either complementary or can create conflict i.e. they can create their own forms of habitus. Deviant behavior from the prescribed norm challenges those assumptions and can lead to both positive and negative outcomes. Deviant behavior that drives constructive benefit can be termed innovation or intrapreneurship, in fact Faßauer (2018) defines innovative behavior as a form of desired deviance. Deviant behavior i.e. being non-compliant or differing from the norm arises as a result of innovation or rebellion and a lack of opportunity to achieve personal and organizational goals through prescribed or legitimate means (Merton, 1957) i.e. the individual

believes the rules and laws do not apply to them or they are under pressure to behave deviantly (Moschis & Cox, 1989)

Intrapreneurial employees are an important driver of innovation and strategic renewal within organizations (Rigtering & Weitzel, 2013). Intrapreneurship describes the "emergent behavioral intentions and behaviors that are related to departures from the customary ways of doing business in existing organizations" (Antoncic & Hisrich, 2003). Intrapreneurship is "a new way of doing" where individuals within organizations can develop opportunities and a reconfiguration of existing systems and resources to drive product, service, process and technology innovation (Auer, Antoncic & Antoncic, 2011). Employee satisfaction is shown to correlate positively with intrapreneurship (Auer Antoncic & Antoncic, 2011) as does trust in direct line managers (Rigtering & Weitzel, 2013), thus promoting employee satisfaction is essential to motivate staff to seek out ways of continuous improvement. However, the individuals who innovate within food businesses may on occasion need to take unorthodox and non-prescribed approaches perhaps ignoring formal systems. Depending on the organization, this deviant behavior can either be visible and accepted autonomous behavior or conversely can be invisible and opaque (Globocnik & Salomo, 2015). Constructive deviance i.e. operational practices that are not prescribed, defined or accepted by consensus can be beneficial and lead to positive change that drives innovation, entrepreneurship and risk-taking (Spreitzer & Sonenshein, 2003; Galperin & Burke, 2006; Yıldız, B., Erat, Alpkan, Yıldız, H., & Sezen, 2015), enabling individuals and/or teams to outperform others and gain competitive advantage even though they have access to the same resources (Mertens et al. 2016) and as a result contribute to organizational, employee or other stakeholders well-being (Galperin, 2002). Thus, constructive deviance is: "an umbrella term that encompasses several different behaviors, including taking charge, creative performance, expressing voice, whistle-blowing, extra-role behaviors, prosocial behaviors, prosocial rule breaking, counter-role behaviors, and issue selling" (Vadera, Pratt & Mishra, 2013, p1221).

Constructive deviance can be influenced by the level of staff autonomy and the depth of hierarchical power in the organization (Warren, 2003), elements that Hofstede (1984) described as individualism, collectivism and power distance. Galperin and Burke (2006) propose a typology for constructive deviance, firstly differentiating between individual or organizational action and as a result they highlight three types of behavior. Interpersonal constructive deviance that operates at the individual level (micro) and brings about change through positive action. At the organisational level (meso), innovative organizational constructive deviance that drives change

and benefit through unconventional “ways of doing” to ultimately benefit the organization. Lastly, challenging organizational constructive deviance that involves more disruptive behavior(s) that challenge existing organizational norms through bending or breaking rules and procedures ultimately benefiting the organization (Table 5).

Take in Table 5

Examples of constructive deviance in food supply chains include generation of ideas from the workforce to improve efficiency, and the development of quality teams to drive continuous improvement. Thus constructive deviance can provide an opportunity for organizations to improve and benefit from new ideas and approaches or constructive deviance can be an early warning for managers within a business or if externally communicated, for regulators themselves. There are multiple examples of where constructive deviance through whistleblowing (see Soon & Manning, 2017) has led to identification of significant food safety issues including Peanut Corporation of America (Leighton, 2016; Moy, 2018); and JBS in Brazil and the “weak meat” scandal (Jaffee, Henson, Unnevehr, Grace & Cassou, 2018). Whistleblowing is often at odds with moral muteness. Moral muteness is a failure to voice ethical concerns such as via whistleblowing, because that action in itself is seen as a threat to harmony, efficiency and normative images of power and effectiveness (Bird & Walters, 1989; Stephens, 2002; Sekerka, 2012; Drumwright & Murphy, 2013). Bird (1996) characterized a number of types of moral muteness or silence that could occur within an organization. These were: 1) not raising the alarm when non-compliance or misconduct was observed; 2) not speaking up when organizational policies included morally questionable behaviour; 3) not questioning decisions that were morally questionable or unclear; 4) not providing adequate feedback in work relationships; 5) not speaking up for own moral ideas; and 6) not negotiating for morally preferable objectives. Verhezen (2010) concludes that in order to overcome moral muteness and to drive the “voices” of critique and creativity the organization needs to move from a compliance-orientated to an integrity based organizational climate. However there are a number of supply chain pressures that can prevent this evolution of organizational climate taking place.

4. **Individualism, collectivism, masculinity and power distance**

Individualism reflects a more loosely connected social interaction within an organization whereas collectivism suggests a tighter social framework and greater interdependence (Hofstede, 1984). Thus, Hofstede argues individualistic organizations are driven by consideration of self-interest (egoism), with business interest as the primary objective in a form of calculative relationship based on exchange of labor

(human capital) for financial reward (see Table 4). Individualistic cultures, via an efficiency or an instrumental based organizational climate, exhibit risk focused, and goal-driven calculative logic in their decision-making i.e. “the end justifies the means” (Mikes, 2009; Bame-Aldred, Cullen, Martin, & Parboteeah, 2013).

The trait “masculinity” reflects a culture that rewards achievement, assertiveness, and material success whereas femininity captures a non-assertive approach and the aspects of trust, nurture, and quality of life (Hofstede, 1984). Thus masculine, individualistic, assertive climates may encourage constructive deviant behaviors in order to achieve prescribed organizational goals or to gain greater organizational performance (Bame-Aldred et al. 2011), conversely such climates can also become toxic. Toxic forms of leadership include the masculinity dynamics of “win or die” and whilst toxic leadership is associated with lower work engagement and job meaning, with men who report having a toxic leader there is a slight increase in work engagement and work meaningfulness (Matos, O'Neill, & Lei, 2018). Toxic leaders can focus on gaining control through rudeness, coercion, arrogance, and inflexibility and toxic leaders will rationalize their behavior as necessary to get the job done (Reed, 2004; Pelletier, 2010). There are multiple studies that have considered toxic leadership (Reed, 2004; Webster, Brough, & Daly, 2016), but not specifically in the food sector. An example of toxic leadership is the aforementioned Peanut Corporation of America incident in 2008. The Parnell brothers led a business where the resultant Salmonella outbreak (46 States in the UK) caused illness in thousands with at least nine fatalities and 4000 products recalled by around 400 businesses (Leighton, 2016). Their approach to food safety showed the aforementioned masculinity traits taken to an extreme. Positive Salmonella test results were ignored and contaminated products were sent to customers showing conscious decision making to ignore food safety concerns and a clear lack of management level accountability to customers and consumers (Manning, 2017b).

Appelbaum, Iaconi, and Matousek (2007) describe the “toxic organization” in terms of being an organization that in order to be successful “depends on employees that are dishonest and deceitful.” This means the instrumental organizational climate (Table 3) focuses on a self-interested “bottom-line” mentality that centers on profit (Appelbaum, Deguire, & Lay, 2005). A toxic organizational climate accepts rule breaking, deviancy and wrong doing in terms of its organizational structures, its organizational values and its organizational practices that are often influenced by a situational habitus that creates a set of toxic organizational norms (van Rooj & Fine, 2018). These toxic organizational norms and processes, directly

oppose regulatory requirements, enable and encourage rule breaking, obstruct legal and market compliance or delegitimize accepted corporate values (Table 6).

Take in Table 6

Hofstede also considered the influence of power distance on the behavior of individuals. Power distance is the extent to which members of a given society accept that power in organizations is distributed unequally (Hofstede, 1984). Large power distance societies accept a strong hierarchical order and a restriction of knowledge and information flow to maintain power; whereas in small power distance cultures individuals will seek justification for the power inequalities they perceive (Hofstede, 1984; Gray, 1988). In organizational climates with high power distance, the power of the manager is more absolute, and subordinates that are unhappy or seeking redress may be subject to reprisals (Hofstede, 1984) and this may mean that negative deviant behavior may somehow be justified by perpetrators.

Individuals who have more egalitarian values are strongly influenced by concerns over justice (Fischer & Smith, 2006). Indeed, power distance is positively related to corruption (Abraham & Pane, 2014). Collectivism too, is a predictor of corruption tendency with a negative association. As collectivism by focusing on group rather than individual goals (self-interest) increases, then corruption tendency decreases (Abraham & Pane, 2014). However, these findings presuppose that the collectivism culture within an organization is focused on positive goals. In a highly competitive global market, delivery of organizational effectiveness even organizational survival is underpinned by individual and collective attitudes the and behaviors of employees (Kanten, & Ulker, 2013). Kanten and Ulker argue (2013, p.150):

> "If employees perceive organizational climate [as] more supportive they will exhibit positive behaviors such as organizational citizenship behavior, proactive behavior, innovative behavior etc. If they perceive destructive and unfavorable [organizational] climate, they will avoid positive and extra role behaviors, [and] tend to exhibit more counterproductive behaviors."

Collectivism within an organization is built on mutuality in relationships with responsibility, trust and loyalty as underpinning values between employer, employee and mutually between employees (Hofstede, 1984). Collectivism can extend across a supply chain too. However even in an organization with an overall collectivism culture, sub-cultures can occur as well as there being instances of calculative disloyalty being exhibited by a few employees. Loyalty to an organization links to the degree that the organization's values are shared by the employees and the employees' personal sense of ownership in the values and mission of the

organization (Taye & Sang, 2017). Poor leadership, employee dissatisfaction and a lack of recognition all negatively affect loyalty. Thus, factors such as job security, career development, motivation, bonding with others, leadership and commitment drive greater employee loyalty and the building of trust (Mehta, Singh, Bhakar, & Sinha, 2010).

Yen and Tang (2013) differentiate between individualism (self-interest) and collectivism (group-interest), the latter characteristic being more closely aligned with organizational citizenship behavior, and employees undertaking group tasks more effectively and being less likely to engage in deviant behavior. Organizational justice is a mediator too that determines propensity for organizational citizenship. Organizational justice is the approach employees take to determine the degree of fairness in their treatment as an employee (Moorman, 1991). As a construct, organizational justice is related to an individual's motivation and their cognitive approach to rationalizing deviant behavior (Rae & Subramaniam, 2008). Indeed, they state:

> "when perceptions of organizational justice are low, employees are more easily able to rationalize committing theft because they are more likely to feel vindictive against an "unjust" employer and experience less guilt in doing so. (Rae and Subramaniam, 2008, p.107).

Multiple examples exist of where individuals within organizations have behaved badly including sabotage where this has been mediated by their perceptions of organizational justice. Taylor and Walton (1971) highlight an organization that had to dispose of half a mile of "Blackpool rock" because an offensive expletive had been printed through the product in an incident of workplace sabotage (Manning, 2019b). The needles in strawberries sabotage incident in Australia in 2018 is another example of such behavior where a disgruntled employee is said to have placed needles into the strawberries due to a workplace grievance (Marsh, 2018). Studies also highlight a significant and negative correlation between worker perceptions of organizational justice and their willingness to exhibit fraudulent behavior (Greenberg, 1993; Rae & Subramaniam, 2008). Fairness and perceptions of unethical or unfair treatment in the workplace are important aspects when considering deviant behavior (Khattak, Khan, Fatima & Shah, 2018). Negative employee deviance is also linked to personal emotions such as anger, and interpersonal stressors in the work environment that can lead to reduced productivity, absenteeism, sabotage, theft or a wish to undertake retaliatory action or seek restorative justice (Ambrose, Seabright & Schminke, 2002).

Distributive justice reflects the perceived fairness of actions or outcomes i.e. the apportionment of privileges, duties, and goods in practice based on the merits of the individual and in the best interest of the

organization (Folger, 1977; Shore & Shore, 1995). Greenburg (1987) positions a taxonomy of organizational justice with two independent elements: a reactive-proactive dimension and a process-content dimension. Proactive approaches seek to embed justice in the workplace whereas the reactive element reflects worker's seeking to overcome or mitigate unfairness. The process-content dimension considers how an organization develops protocols to deliver fair performance outcomes such as equal pay, gender balance etc. whereas the proactive approach considers the actualization of those protocols in practice and whether the stated objectives have been delivered. In a compliance-based management system employee perceptions of the degree of fairness of procedures strongly influences their willingness to comply with those specified requirements and by inference their willingness to exhibit negatively deviant behavior. Compliance can be promoted by the use of sanctions and deterrents and ultimately within the food supply chain such penalties for non-compliance include the denial of market access for an organization, or the loss of a job or reduction in pay for an individual. Ethical values underpin the intrinsic motivation of employees and together with their rationalization of extrinsic fear-based deterrents and sanctions and their determination of the risk of detection will ultimately inform whether they will, or will not comply with organizational rules and policies (Li, Sarathy, Zhang & Luo, 2014).

Procedural justice refers to the perceived fairness of a company's formal systems and protocols (Folger, 1977; 1987; Skarlicki & Folger, 1997). Procedural justice affects citizenship behavior because the judgments affect the degree to which an employee believes an organization values him or her (Moorman, Blakely & Niehoff, 1998). Procedural justice has two elements: firstly instrumental procedural justice reflects the design of the procedures and the explicit elements that they contain i.e. the process-content element and how the design of such procedures promotes fairness and perception of the procedure as an instrument of delivery (Folger & Konovsky, 1989). Alternatively, non-instrumental procedural justice reflects the actions taken by the decision maker themselves that extend beyond the mere contractual i.e. the ethical framing of the procedure, how the decision-maker respects workers' rights and how fairness is implemented in practice (Folger & Konovsky, 1989). Bies and Moag (1986) describe this second element as interactional justice i.e. it has distinct social attributes. Interactional justice reflects the quality of the interpersonal treatment received by employees during the enactment of organizational procedures (Skarlicki & Folger, 1997). Indeed interactional justice is cited as the only element of fairness to significantly relate to organizational citizenship (Moorman, 1991), perhaps because it is a clearly tangible aspect of fairness i.e. perceptions of how people in the organization behave towards me.

Greenberg (1990) defines interpersonal justice namely the degree of interaction in terms of politeness, respect etc. whilst informational justice is centered on the explanations provided to employees by those in authority that describe why procedures were used in a certain way or why outcomes were distributed amongst employees in a certain way (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Interpersonal justice therefore alters workers reactions to decision outcomes, whereas informational justice influences workers reactions to the information they need to be able to consider the equity of the procedures they are required to comply with (Colquitt et al. 2001). Thus, some might see a procedure as fair if they feel there was adequate control and opportunity for representation within the process of development and implementation i.e. they have made representation or had a "voice" (Folger, 1977; Lind & Tyler, 1988; Colquitt et al. 2001). Positive organizational citizenship relates strongly to organizational justice and its subsets, interpersonal justice and procedural justice. Whilst constructive deviance is a potential benefit for organizations in terms of promoting innovation, intrapreneurship and greater financial returns, the alternative, destructive deviance, is a concern.

5. **Destructive deviance in the workplace**

Deviant behavior is the "voluntary behavior that violates significant organizational norms and, in so doing, threatens the well-being of an organization, its members, or both" (Robinson & Bennett, 1995, p. 556) or its legitimate interests (Bennett & Robinson, 2000; Gruys & Sacket, 2003; Galperin & Burke, 2006). Destructive deviance is also described in the literature as either self-defeating work behavior or counter-productive workplace behavior. The term "self-defeating work behavior" is used to describe the negative attitudes or actions at the individual level that are: self-initiated, intentional and deliberate, and self-controllable behaviors that can undermine or impede job performance, healthy work attitudes, and work relationships and arise from both conscious, reasoned thought, and unintentional, impulse orientated behavior (Renn, Steinbauer & Biggane, 2018). There are multiple types of self-defeating work behaviors (Table 7) including weak self-management, self-sabotage, procrastination, poor abilities in goal setting and decision making and weak self-regulation. Renn et al. (2018) divide these behaviors into three categories: job performance, healthy work attitudes, and essential work relationships. This typology have been used in Table 7 to contextualize factors identified in the literature that relate to negative work attitudes [attitudinal response] and how they in turn may influence both working relationships and job performance [interpersonal and output based behavioral responses].

Take in Tables 7 and 8

Counter-productive workplace behavior is employee behavior that is intended to have a detrimental effect on organizations and people that work in those organizations (Fox et al. 2001). Gruys and Sackett (2003) in their work cite eleven categories of counter-productive workplace behavior (Table 8). These include theft, destruction of property, misuse of information, time and resources, unsafe behavior, absenteeism, poor quality work, alcohol or drug use at work and inappropriate verbal or physical actions. Robinson and Bennett (1995) too developed a typology of deviant workplace behaviors with four categories production deviance, property deviance, political deviance and personal aggression (see Table 8). These categories critique the type of behavior shown in terms of its impact on production efficiency, damage or loss to property, and the impact on others. In Table 8, these factors have been mapped to two elements of the typology of Renn et al. (2018) working relationships and job performance. Antecedents of destructive deviant behavior and counterproductive work behavior (Table 9) and factors that can drive this negative behavior are situated in the work environment, triggered by management systems or alternatively the behaviors of others.

Take in Table 9

Examples of the behavior of others driving employee sabotage is the customer-employee interaction in the service sector (Skarlicki, Van Jaarsveld, & Walker, 2008; Chi, Tsai & Tseng, 2013). As previously described if employees perceive they are victims of injustice or inequality this can be a leading motivational factor in the incidence of workplace deviance as can a sense of powerlessness or lack of autonomy (Manning, 2019a), personality traits in the individual and the work context (Chi et al. 2013). Therefore, if the antecedents of such behavior are known (see Table 8), the potential for an employee to exhibit destructive deviant behavior could be identified through a series of warning indicators or signals. These include identified levels of absenteeism, low morale, poor job satisfaction, stress, or poor performance (Alias, Mohd Rasdi, Ismail & Abu Samah, 2013), personality traits, work alienation, or moral disengagement. Whilst the motivators of injustice and inequality can influence individual or group destructive deviant behavior, another driver of collective deviance is if the organization requires such practices, even supports them in a strategic approach to surviving in the operational environment and conditions in which it find itself, resulting in a toxic organizational climate. Toxic, or corrosive behavior may also be driven by internal rivalry (Bruch & Ghoshal, 2003) or notions of self-protection at the individual or organizational level (Sekerka, 2012). It could be assumed that the direct effect is simply linear and many of the destructive deviance activities described herein will automatically reduce organizational effectiveness and profitability. However, Wellen and Neale (2006) argue that indirect impacts

especially group cohesion may positively reinforce negative behaviour as it is perceived to enrich the group's social and interpersonal dynamics. Sekerka (2012, p.278) asserts that:

> "Telling employees to be ethical has not been particularly effective in securing ethical performance because employees face complex issues that present difficult decisions, often forcing them to choose between competing values….. while a compliance-driven approach may help people become aware of the rules, it does little to cultivate, support, and build the moral competencies necessary for ethical strength."

This means that a compliance driven organization may actively participate in rule bending and ambiguity to on the one hand meet certain organizational goals and yet still be able to demonstrate they have met regulatory and market standards. The normative behaviour is simply ambiguous and fluid or alternatively, incremental ethical degradation in organizational practice is so small in practice that the rate of change in ethical values goes unrecognized over time until a toxic, corrupt culture has become strongly embedded (Sekerka, 2012). Sekerka describes this as an ethical performance continuum where at one end ethical weakness occurs and at the other the performance has the characteristics of ethical strength (Table 10). Indeed as industry ethics becomes debased and diminished, toxic culture simply smothers integrity (Sekerka, 2012). Table 10 has been adapted to include the multiple themes explored in this paper and clearly differentiates between legal liability and moral liability an important baseline when designing a compliance-based management system i.e. does the organizational management system reflect least-cost legislative compliance or as the continuum is crossed is the organization seeking compliance to a higher moral and ethical baseline e.g. higher welfare standards or higher social and ethical worker standards such as Fairtrade and then to a position of ethical or moral strength.

Take in Table 10

Moral myopia has been described as a distortion of moral vision that prevents moral issues from being visible (Drumwright & Murphy, 2013). Robinson and McNeill (2008) differentiate between formal rule compliance and goal-orientated/substantive compliance in that formal compliance is the behavior that technically meets the minimum specified requirements of a rule or standards whereas goal orientated/substantive outcomes based compliance suggests an active engagement with meeting the prescribed requirements and even exceeding a standard. Further they argue formal compliance is auditable

whereas substantive compliance may be more qualitative and not all aspects may be auditable or quantitatively verifiable.

Legislative and supply chain standards that are compliance based, prescriptive and inflexible can drive the development of a least cost, transactional food safety management systems (see Table 10) rather than the development of bespoke outcomes based socio-technical food safety systems with cultural maturity (see Manning et al. 2019). Extending the concept of cultural maturity to embrace wider food policy aspects allows consideration of how to transition from a compliance-based to an integrity based organizational climate in the food supply chain. Thus it is important to contextualize and frame cultural maturity and the tools that are used to determine the transition from a compliance based to an integrity based organizational climate.

6. Determining cultural maturity

Schein (1985; 2004) determined there were three hierarchical levels of actualization of culture and these were adapted by Griffith (2014). Level 1 - organizational climate is the outermost, visible layer of organizational culture observed and verified during audits and inspections. Level 2 - underpinning culture includes the organization's espoused values and guides the employees' behavior and attitudes to authority and regulatory and market standards compliance. Level 3 – core culture reflects the invisible and assumed core values of what the organization is all about. A cultural dimension is "an area of the overall traits of organizational culture that contains components which can be actioned and measured for strength and effectiveness" (Jespersen, Griffiths, Maclaurin, Chapman & Wallace, 2016, p. 175). A trait in this context can be considered as a characteristic, or a point of difference in the management system itself that is visible and tangible and thus measurable. Alternatively, a trait may relate to personality and the individuals that work within an organization and the development of individualistic or collective cultural attributes according to beliefs, values or motivations (Church, 2000).

Maturity models "enable a structured and defined approach to analyse the initial state on which weaknesses can be designated, the potential for improvement can be shown and specific steps for improvement can be initiated*"* (Enke, Glass & Metternich, 2017, p.3). Jesperson et al. (2016, p.176) concur stating:

> "Maturity models are tools to evaluate a current state of a given culture, system, business or process, and to develop improvement plans against a scale of maturity…. A maturity model can help an organization understand how industry peers are performing and how this performance compares to its own.

552 The model summarizes acceptable industry practices and allows the organization to assess what is required
553 to reach a certain level of management and control of these practices."

554 This suggests that maturity models not only allow for internal analysis but also an ability to
555 competitively benchmark processes and performance against others. Maturity models differ in terms of the
556 number of stages used, variables and characteristics chosen and areas of focus and whether they are used
557 as a form of "gap analysis" or best practice methodology i.e. they focus either on considering maturity in terms
558 of iterative stages, maturity dimensions, or the sophistication of the factors that influence the degree of maturity
559 (Carvalho, Rocha, van de Wetering & Abreu, 2019). Enke et al. (2017) distinguish maturity models as either
560 being assessment models or optimization models, where assessment models evaluate individual elements,
561 components and dimensions of a culture and optimization models highlight the transition process with cultural
562 maturity levels based on best practice. Therefore, complex measurement of cultural maturity requires the
563 identification of characteristics (traits) so they can act as descriptors, or "variables of reference" and
564 demonstrate transition through an evolutionary process from one place or status to another (Becker,
565 Knackstedt & Pöppelbuß, 2009; Mettler & Rohner, 2009; Carvalho et al. 2019). However, transformation
566 requires an organizational ability or willingness to change through a process of design and redesign (Reefke
567 & Sundaram, 2018).

568 There is further confusion in the literature as the term "level" can also be used to describe the structure
569 of the organizational climate as well as the stage of maturity of the said culture. Schein (2004) defines three
570 levels of cultural maturity: founding and early growth, then midlife as a result of sub-cultures forming in the
571 original culture, then maturity and decline where a strong culture develops or else withers and fails. A maturity
572 stage (as it will be posited in this paper to differentiate from the other use of the term level) can be described
573 is an evolutionary plateau of process improvement where processes are organized into development stages
574 (Carnegie Mellon, 2002; McCormack, Bronzo Ladeira & Paulo Valadares de Oliveira, 2008; Reefke &
575 Sundaram, 2018). Goncalves Filho, Andrade & de Oliveira Marinho, (2010) state that in a three stage model
576 the first maturity stage is to see food safety as simply a technical issue that needs to be addressed by a
577 compliance based management system. The next maturity stage recognizes that behavioral aspects of
578 organizational climate are not addressed in the compliance based management system so accountability with
579 associated sanctions is then embedded into the management system. As has been highlighted already in this
580 paper, a sanctions based system can drive an organizational climate where negative deviant behavior is not

only promoted, but accepted as “a way of doing business.” The third stage maturity stage in their model reflects the need for continuous improvement with an emphasis on communication, training and management style. Thus many advocates of cultural maturity models have considered a process approach aligned to actions or activity stages for the organization (Goncalves & Waterson, 2018).

Whilst, cultural maturity models can be seen to determine a status in movement or travel as an organization, the use of frameworks in the industry reflects a transactional approach to verify the presence of tangible cultural elements such as management commitment or information communication or abstract elements such as attitudes and behaviors (Stemn, Bofinger, Cliff, & Hassall, 2019). Frameworks are therefore designed to encompass the dimensions, traits and attributes associated with a given organizational climate. Frameworks, models and assessment tools have been developed to determine cultural maturity for safety in the petrochemical sector (Goncalves et al. 2010); gas operations (Brhari, 2019); mining (Stemn et al. 2019); information systems management in hospitals (Carvalho et al. 2019); sustainability (Reefke & Sundaram, 2018) and food safety culture (Jespersen et al. 2016). Whilst some cultural maturity assessment tools only focus on positive cultural aspects, verifiable traits can be used to demonstrate both positive and negative aspects of organizational climate. Comparing cultural maturity models, as some literature sources have done (Jespersen et al. 2016) shows there are different underpinning rationales for cultural dimension development and assessment activities. Further, designing maturity assessment tools that only measure the measureable may omit assessment of more qualitative, assumed values and this is a weakness in the organizational climate and wider cultural verification process. A compliance based management approach focused solely on measureable attributes will not guarantee safe food. Indeed in terms of identifying and assessing toxic organizational climate, presupposing an ability to measure its presence is somehow counterintuitive as by its nature in order to avoid discovery, such practice is often intentionally opaque, hidden and invisible.

7.1 Cultural dimensions

Hofstede, Hofstede and Minkov (2010) define six cultural dimensions that differentiate national cultures, some of which have already been critiqued in this paper: power distance, individualism versus collectivism, masculinity versus femininity and three others; uncertainty avoidance, indulgence vs restraint and long versus short term orientation. Jespersen et al. (2016) using the work of Schein (2004) and five cultural dimensions (external adaption, internal adaption, reality and truth, time and space, human nature, activity and relationship) to develop a series of related tangible and abstract components translating these into cross-

610 referenced capabilities (Table 11). These capabilities are perceived value, people systems, process thinking,
611 technology enabler and tools and infrastructure.

612 **Take in Table 11**

613 Building on this Jespersen, Griffiths & Wallace (2017) identify iteratively five cultural dimensions:
614 values and mission, people systems, adaptability, consistency and risk awareness and these dimensions have
615 been adopted by the Global Food Safety Initiative (GFSI) position paper on food safety culture (GFSI, 2018).
616 Further Jespersen et al. (2016; 2019) highlight four areas to measure cultural maturity, with a focus on food
617 safety: social norms, behavioural intent, motivation and social desirability and five cultural maturity stages.
618 This work on cultural maturity stages has been used as a baseline in this research to develop a cross-
619 comparison between the five cultural maturity models and their associated cultural maturity stages (Figure 1).
620 This led to a proposed model defining of seven stages of cultural maturity: Stage 1 unaware and non-compliant
621 with both legal and moral requirements, Stage 2 – minimal compliance with some awareness but unstructured
622 and poorly focused response by organization; Stage 3 - a reactive approach to developing a compliance based
623 systems with limited preventive measures; Stage 4 – a compliance based system that addresses legal liability;
624 Stage 5 – a compliance based system that is positioned above minimum legal standards; Stage 6 – optimizing
625 culture and a level of cultural maturity where management systems and processes are managed through
626 continuous improvement activities; Stage 7 – integrity based organizational climate that exceeds the
627 requirements of minimum legal and moral liability and drives continuous improvement. This new model is of
628 value in developing and enhancing existing cultural maturity tools.

629 **Take in Figures 1 and 2**

630 Figure 2 draws together the range of value traits (characteristics) that have been stated in the literature
631 as being of value in assessing cultural and climate maturity. These have been synthesized into two elements:
632 people value traits and system value traits. The six people traits are care and respect, integrity and trust,
633 commitment and accountability, being responsible, leadership and Involvement: degree of engagement,
634 collective and individual participation of staff. Paine (1994) in their work on integrity based systems highlighted
635 that company leaders should be personally committed, credible and willing to take action on the values they
636 espouse (see Table 2). Further Paine proposes that organizations should ensure responsible conduct through
637 the development of company values and aspirations, and should embed an understanding of the need for staff
638 to meet social obligations including legal compliance. Figure 2 positions that values based organizations

should ensure there is clear communication and information is shared in ways that promote positive perceptions of organizational justice and this can be actively supported by a commitment and investment in staff. There also needs to be a coherence between formal systems and practice with particular emphasis on ensuring fairness and consistency. Procedures must also be in place to promote organizational learning in order to reduce destructive deviance and self-defeating work behavior. The research of Sekerka (2012) proposes the existence of an *ethical performance continuum* where at one end toxic culture drives ethical weakness and at the other the culture has the characteristics of ethical strength, and by inference demonstrated organizational integrity (Table 10). To develop a mature ethically strong organizational climate constructive deviance needs to be encouraged as it drives innovation, continuous improvement and positive change, and such innovation can be stifled by the application of sanctions based, prescriptive supply chain normative standards. Whilst verification activities that periodically assess organizational culture and climate have value, regular monitoring of early warning signals, traits or characteristics and antecedents of destructive deviance should be established. These signals include absenteeism, low morale, poor job satisfaction, stress, or poor performance (Alias et al. 2013), theft, destruction of property and others see Tables 8 and 9. Organizations must develop robust systems to identify these key signals, develop monitoring systems and take action when concerns are identified. As has been shown in this paper, incidents of self-defeating work behavior can and do occur, and organizations need to be aware of this and take appropriate mitigating action.

8.0 Concluding thoughts

Compliance is the act or status of complying with an imperative regulatory or normative requirement and can be focused on aspects of legal and moral liability. A wide range of theory has been explored and critiqued in this review in order to frame a comparison of organizational culture and climate typologies, cultural models and cultural maturity assessment tools. The models considered characterize aspects of positive food safety culture through a staged hierarchy of cultural maturity and a new model is proposed in this work. In order to drive continuous improvement within an organization, and in addressing and ensuring food safety in particular, positive, constructive deviance is required, if not essential. However, there is minimal research that focuses on the characterization and identification of deviant negative behavior or the development of early warning systems designed to pinpoint signals, traits or characteristics of negative deviant behavior such as low morale, theft, destruction of property or absenteeism that could be precursors of non-compliant, illegal, or

toxic behavior. Further antecedents of deviant behavior have been identified and can be monitored to reduce the incidence of negative deviance.

All process activities and employee behavior is framed by the characteristics of the organizational climate. A new seven stage cultural maturity model is proposed and explored in this research which focuses on values traits as well as structural and transactional organizational dimensions. In conclusion, the use of cultural maturity models and assessment tools is of value in assisting organizations to translate from a rule, instrumental or compliance-based organizational climate to an ethically strong organizational climate that focuses on integrity, building trust and values.

Author Contributions (required for *JFS* original research manuscripts)

L Manning is the sole contributor to this paper

683 **References**

684 Abraham, J., & Pane, M. M. (2014). Corruptive tendencies, conscientiousness, and collectivism. *Procedia-*
685 *Social and Behavioral Sciences*, *153*, 132-147. https://doi.org/10.1016/j.sbspro.2014.10.048

686 Alias, M., Mohd Rasdi, R., Ismail, M., & Abu Samah, B. (2013). Predictors of workplace deviant behaviour:
687 HRD agenda for Malaysian support personnel. *European Journal of Training and Development*, *37*(2), 161-
688 182. https://doi.org/10.1108/03090591311301671

689 Ambrose, M. L., Seabright, M. A., & Schminke, M. (2002). Sabotage in the workplace: The role of
690 organizational injustice. *Organizational behavior and human decision processes*, *89*(1), 947-965.
691 https://doi.org/10.1016/S0749-5978(02)00037-7

692 Amran, A., & Haniffa, R. (2011). Evidence in development of sustainability reporting: a case of a developing
693 country. *Business Strategy and the Environment*, *20*(3), 141-156. https://doi.org/10.1002/bse.672

694 Amundrud, Ø., & Aven, T. (2015). On how to understand and acknowledge risk. *Reliability Engineering &*
695 *System Safety*, *142*, 42-47. https://doi.org/10.1016/j.ress.2015.04.021

696 Antoncic, B., & Hisrich, R. D. (2003). Clarifying the intrapreneurship concept. *Journal of small business and*
697 *enterprise development*, *10*(1), 7-24.https://doi.org/10.1108/14626000310461187

698 Appelbaum, S. H., Iaconi, G. D., & Matousek, A. (2007). Positive and negative deviant workplace behaviors:
699 causes, impacts, and solutions. *Corporate Governance: The international journal of business in society*, *7*(5),
700 586-598. https://doi.org/10.1108/14720700710827176

701 Appelbaum, S. H., Deguire, K. J., & Lay, M. (2005). The relationship of ethical climate to deviant workplace
702 behaviour. *Corporate Governance: The international journal of business in society*, *5*(4), 43-55.
703 https://doi.org/10.1108/14720700510616587

704 Auer Antoncic, J., & Antoncic, B. (2011). Employee satisfaction, intrapreneurship and firm growth: a
705 model. *Industrial Management & Data Systems*, *111*(4), 589-607.
706 https://doi.org/10.1108/02635571111133560

707 Aven, T. (2015). Implications of black swans to the foundations and practice of risk assessment and
708 management. *Reliability Engineering & System Safety*, *134*, 83-91.
709 https://doi.org/10.1016/j.ress.2014.10.004

710 Aven, T., & Krohn, B. S. (2014). A new perspective on how to understand, assess and manage risk and the
711 unforeseen. *Reliability Engineering & System Safety*, *121*, 1-10. https://doi.org/10.1016/j.ress.2013.07.005

712 Bame-Aldred, C. W., Cullen, J. B., Martin, K. D., & Parboteeah, K. P. (2013). National culture and firm-level
713 tax evasion. *Journal of Business Research*, *66*(3), 390-396. https://doi.org/10.1016/j.jbusres.2011.08.020
714 Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1994). Losing control: How and why people fail at self-
715 regulation. San Diego, CA: Academic Press.
716 Baumeister, R. F., & Scher, S. (1988). Self-defeating behavior patterns among normal individuals: Review
717 and analysis of common self-destructive tendencies. *Psychological Bulletin*, 104, 3–22.
718 Becker, J., Knackstedt, R., & Pöppelbuß, J. (2009). Developing maturity models for IT
719 management. *Business & Information Systems Engineering*, *1*(3), 213-222. https://doi.org/10.1007/s12599-
720 009-0044-5
721 Becker, T. E. (1998). Integrity in organizations: Beyond honesty and conscientiousness. *Academy of*
722 *Management Review*, *23*(1), 154-161. https://doi.org/10.5465/amr.1998.192969
723 Behari, N. (2019). Assessing process safety culture maturity for specialty gas operations: A case
724 study. *Process Safety and Environmental Protection*, *123*, 1-10. https://doi.org/10.1016/j.psep.2018.12.012
725 Bennett, R. J., & Robinson, S. J. (2000). Development of a measure of workplace deviance. *Journal of*
726 *Applied Psychology*, 85, 349–360.
727 Bies, R. J., & Moag, J. F. (1986). Interactional justice: Communication criteria of fairness. In R. J. Lewicki, B.
728 H. Sheppard, & M. H. Bazerman (Eds.), *Research on negotiations in organizations* (Vol. 1, pp. 43-55).
729 Greenwich, CT: JAI Press.
730 Bird, F. B.: 1996, The Muted Conscience. Moral Silence and the Practice of Ethics in Business (Quorum
731 Books, London).
732 Bird, F. B., & Waters, J. A. (1989). The moral muteness of managers. *California Management Review*, *32*(1),
733 73-88. https://doi.org/10.2307/41166735
734 Bourdieu, P. (1993). *Sociology in question* (Vol. 18). Sage.
735 Bourdieu, P. (1991). *Language and symbolic power*. Harvard University Press.
736 Bourdieu, P. (1990). *The logic of practice*. Stanford university press.
737 Bruch, H., & Ghoshal, S. (2003). Unleashing organizational energy. *MIT Sloan Management Review*, *45*(1),
738 45.
739 Butler Jr, J. K., & Cantrell, R. S. (1984). A behavioral decision theory approach to modeling dyadic trust in
740 superiors and subordinates. *Psychological reports*, *55*(1), 19-28. https://doi.org/10.2466/pr0.1984.55.1.19

741 Carnegie Mellon - Software Engineering Institute, Capability Maturity Model Integration (CMMI), version 1.1,
742 CMMISM for Systems Engineering, Software Engineering, Integrated Product and Process Development, and
743 Supplier Sourcing (CMMI-SE/SW/IPPD/SS, v1.1), Version 1.1 ed., Carnegie Mellon – Software Engineering
744 Institute, Pittsburgh, PA, 2002, pp. 1–729.
745 Carvalho, J. V., Rocha, Á., van de Wetering, R., & Abreu, A. (2019). A Maturity model for hospital information
746 systems. *Journal of Business Research*, *94*, 388-399.
747 https://doi.org/10.1016/j.jbusres.2017.12.012
748 Chi, N. W., Tsai, W. C., & Tseng, S. M. (2013). Customer negative events and employee service sabotage:
749 The roles of employee hostility, personality and group affective tone. *Work & Stress*, *27*(3), 298-319.
750 https://doi.org/10.1080/02678373.2013.819046
751 Church, A. T. (2000). Culture and personality: Toward an integrated cultural trait psychology. *Journal of*
752 *Personality*, *68*(4), 651-703. https://doi.org/10.1111/1467-6494.00112
753 Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O., & Ng, K. Y. (2001). Justice at the millennium: a
754 meta-analytic review of 25 years of organizational justice research. *Journal of applied psychology*, *86*(3), 425.
755 Crosby, P.B. (1979), Quality is Free: The Art of Making Quality Certain, Vol. 94,McGraw-Hill, New York, NY.
756 Cudney, M. R., & Hardy, R. E. (1993). Self-defeating behaviors. San Francisco: HarperCollins.
757 Czinkota, M., Kaufmann, H. R., & Basile, G. (2014). The relationship between legitimacy, reputation,
758 sustainability and branding for companies and their supply chains. *Industrial Marketing Management*, *43*(1),
759 91-101. https://doi.org/10.1016/j.indmarman.2013.10.005
760 Davidson, R. K., Antunes, W., Madslien, E. H., Belenguer, J., Gerevini, M., Torroba Perez, T., & Prugger, R.
761 (2017). From food defence to food supply chain integrity. *British Food Journal*, *119*(1), 52-66.
762 https://doi.org/10.1108/BFJ-04-2016-0138
763 De Boeck, E., Jacxsens, L., Bollaerts, M., & Vlerick, P. (2015). Food safety climate in food processing
764 organizations: development and validation of a self-assessment tool. *Trends in Food Science &*
765 *Technology*, *46*(2), 242-251. https://doi.org/10.1016/j.tifs.2015.09.006
766 Deming, W.E. (1986), Out of the Crisis, Massachusetts Institute of Technology, Center for Advanced
767 Engineering Study, Cambridge, MA.

768 Dirican, A. H., & Erdil, O. (2016). An Exploration of Academic Staff's Organizational Citizenship Behavior and
769 Counterproductive Work Behavior in Relation to Demographic Characteristics. *Procedia-Social and*
770 *Behavioral Sciences*, *235*, 351-360. https://doi.org/10.1016/j.sbspro.2016.11.043
771 Drumwright, M. E., & Murphy, P. E. (2004). How advertising practitioners view ethics: Moral muteness, moral
772 myopia, and moral imagination. *Journal of Advertising*, *33*(2), 7-24.
773 https://doi.org/10.1080/00913367.2004.10639158
774 Elliott Review into the Integrity and Assurance of Food Supply Networks (2014). Final Report A National
775 Food Crime Prevention Framework July 2014. HM Government. London
776 Enke, J., Glass, R., & Metternich, J. (2017). Introducing a maturity model for learning factories. *Procedia*
777 *Manufacturing*, *9*, 1-8. https://doi.org/10.1016/j.promfg.2017.04.010
778 Esteki, M., Regueiro, J., & Simal-Gándara, J. (2019). Tackling Fraudsters with Global Strategies to Expose
779 Fraud in the Food Chain. *Comprehensive Reviews in Food Science and Food Safety*, *18*(2), 425-440.
780 https://doi.org/10.1111/1541-4337.12419
781 Faßauer, G. (2018). Linking deviation with innovation: behavioral effects of management control through the
782 lens of a theory of deviance. *Journal of Management Control*, *29*(3-4), 275-293.
783 https://doi.org/10.1007/s00187-018-00271-8
784 Feigenbaum, A.V. (1983), Total Quality Control, McGraw-Hill Professional, New York, NY.
785 Fischer, R., & Smith, P. B. (2006). Who cares about justice? The moderating effect of values on the link
786 between organisational justice and work behaviour. *Applied Psychology*, *55*(4), 541-562.
787 https://doi.org/10.1111/j.1464-0597.2006.00243.x
788 Fischer, J. (2004). Social responsibility and ethics: clarifying the concepts. *Journal of Business ethics*, *52*(4),
789 381-390. https://doi.org/10.1007/s10551-004-2545-y
790 Folger, R., & Konovsky, M. A. (1989). Effects of procedural and distributive justice on reactions to pay raise
791 decisions. *Academy of Management journal*, *32*(1), 115-130. https://doi.org/10.5465/256422
792 Folger, R. (1987). Distributive and procedural justice in the workplace. *Social Justice Research*, *1*(2), 143-
793 159. https://doi.org/10.1007/BF01048013
794 Folger, R. (1977). Distributive and procedural justice: Combined impact of voice and improvement on
795 experienced inequity. *Journal of personality and social psychology*, *35*(2), 108.
796 http://dx.doi.org/10.1037/0022-3514.35.2.108

Forehand, G. A., & Von Haller, G. (1964). Environmental variation in studies of organizational behavior. *Psychological bulletin*, *62*(6), 361. http://dx.doi.org/10.1037/h0045960

Fox, S., Spector, P. E., & Miles, D. (2001). Counterproductive work behaviour in response to job stressors and organisational justice: some mediator and moderator tests for autonomy and emotions. *Journal of Vocational Behaviour*, 59(3), 291-309. https://doi.org/10.1006/jvbe.2001.1803

Galperin, B. L., & Burke, R. J. (2006). Uncovering the relationship between workaholism and workplace destructive and constructive deviance: An exploratory study. *The International Journal of Human Resource Management*, *17*(2), 331-347. https://doi.org/10.1080/09585190500404853

Galperin, B.L. (2002). Determinants of Deviance in the Workplace: An Empirical Examination of Canada and Mexico. Unpublished doctoral dissertation, Concordia University, Montreal, Canada.

Global Food Safety Initiative. https://www.mygfsi.com/ (accessed 25 August 2019)

Glińska-Neweś, A., & Stankiewicz, M. J. (2013). Key areas of positive organisational potential as accelerators of pro-developmental employee behaviours. *Positive Management: Managing the Key Areas of Positive Organisational Potential for Company Success, Dom Organizatora TNOiK, Toruń*, 17-34.

GLOBALG.A.P. https://www.globalgap.org/ (accessed 25 August 2019)

Global Food Safety Initiative (GFSI) (2018). A Culture of Food Safety. A position paper from the Global Food Safety Initiative (GFSI). Version 1 (4/11/2018). Available at: https://www.mygfsi.com/images/A_Culture_Of_Food_Safety/GFSI-Food-Safety-Culture-FULL-VERSION.pdf (accessed 31 August 2019)

Globocnik, D., & Salomo, S. (2015). Do formal management practices impact the emergence of bootlegging behavior?. *Journal of Product Innovation Management*, *32*(4), 505-521. https://onlinelibrary.wiley.com/doi/full/10.1111/jpim.12215

Goncalves Filho, A. P., & Waterson, P. (2018). Maturity models and safety culture: A critical review. *Safety science*, *105*, 192-211. https://doi.org/10.1016/j.ssci.2018.02.017

Goncalves Filho, A. P., Andrade, J. C. S., & de Oliveira Marinho, M. M. (2010). A safety culture maturity model for petrochemical companies in Brazil. *Safety science*, *48*(5), 615-624. https://doi.org/10.1016/j.ssci.2010.01.012

Goulston, M. (2005). Get out of your own way at work…and help others do the same. New York: G. P. Putnam's Sons.

826 Goulston, M., & Goldberg, P. (1996). Get out of your own way: Overcoming SDB. New York: Penguin Group.
827 Gray, S. J. (1988). Towards a theory of cultural influence on the development of accounting systems
828 internationally. *Abacus*, *24*(1), 1-15. https://doi.org/10.1111/j.1467-6281.1988.tb00200.x
829 Greenberg, J. (1993). Stealing in the name of justice: Informational and interpersonal moderators of theft
830 reactions to underpayment inequity. *Organizational behavior and human decision processes*, *54*(1), 81-103.
831 https://doi.org/10.1006/obhd.1993.1004
832 Greenberg, J. (1990). Employee theft as a reaction to underpayment inequity: The hidden cost of pay cuts.
833 *Journal of Applied Psychology, 75,* 561-568. http://dx.doi.org/10.1037/0021-9010.75.5.561
834 Greenberg, J. (1987). A taxonomy of organizational justice theories. *Academy of Management review*, *12*(1),
835 9-22. https://doi.org/10.5465/amr.1987.4306437
836 Griffith, C. (2014). Developing and Maintaining a Positive Food Safety Culture. 1st Edition. Highfield
837 Publications.
838 Gruys, M. L., & Sackett, P. R. (2003). Investigating the dimensionality of counterproductive work behavior.
839 *International Journal of Selection and Assessment*, 11(1), 30-42. https://doi.org/10.1111/1468-2389.00224
840 Hartzler, B., & Brownson, C. (2001). The utility of change models in the design and delivery of thematic
841 group interventions: Applications to a self-defeating behaviors group. *Group Dynamics: Theory, Research,*
842 *and Practice*, 5, 191–199. http://dx.doi.org/10.1037/1089-2699.5.3.191
843 Hamilton-Webb, A., Naylor, R., Manning, L., & Conway, J. (2017). 'Living on the edge': using cognitive filters
844 to appraise experience of environmental risk. *Journal of Risk Research*, 1-17.
845 https://doi.org/10.1080/13669877.2017.1378249
846 Hofeditz, M., Nienaber, A. M., Dysvik, A., & Schewe, G. (2017). "Want to" versus "have to": intrinsic and
847 extrinsic motivators as predictors of compliance behavior intention. *Human resource management*, *56*(1), 25-
848 49. https://doi.org/10.1002/hrm.21774
849 Hofstede, G. (1984). Cultural dimensions in management and planning. *Asia Pacific journal of management*,
850 *1*(2), 81-99. https://doi.org/10.1007/BF01733682
851 Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). Cultures and organizations: Software
852 of the mind (3rd ed.). New York, USA: McGraw-Hill Education

Hollingworth, S., Mansaray, A., Allen, K., & Rose, A. (2011). Parents' perspectives on technology and children's learning in the home: social class and the role of the habitus. *Journal of Computer Assisted Learning*, *27*(4), 347-360. https://doi.org/10.1111/j.1365-2729.2011.00431.x

Hou, M. A., Grazia, C., & Malorgio, G. (2015). Food safety standards and international supply chain organization: A case study of the Moroccan fruit and vegetable exports. *Food Control*, *55*, 190-199. https://doi.org/10.1016/j.foodcont.2015.02.023

Jaffee, S., Henson, S., Unnevehr, L., Grace, D., & Cassou, E. (2018). *The safe food imperative: Accelerating progress in low-and middle-income countries*. The World Bank.

Jespersen, L., Griffiths, M., Maclaurin, T., Chapman, B., & Wallace, C. A. (2016). Measurement of food safety culture using survey and maturity profiling tools. *Food Control*, *66*, 174-182. https://doi.org/10.1016/j.foodcont.2016.01.030

Jespersen, L., Griffiths, M., & Wallace, C. A. (2017). Comparative analysis of existing food safety culture evaluation systems. *Food control*, *79*, 371-379. https://doi.org/10.1016/j.foodcont.2017.03.037

Jespersen, L., Butts, J., Holler, G., Taylor, J., Harlan, D., Griffiths, M., & Wallace, C. A. (2019). The impact of maturing food safety culture and a pathway to economic gain. *Food control*, *98*, 367-379. https://doi.org/10.1016/j.foodcont.2018.11.041

Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. *American economic review*, *93*(5), 1449-1475. DOI: 10.1257/000282803322655392

Ishikawa, K. (1985), What is Total Quality Control the Japanese Way, Prentice Hall, Upper Saddle River, NJ.

Kanten, P., & Ulker, F. E. (2013). The effect of organizational climate on counterproductive behaviors: an empirical study on the employees of manufacturing enterprises. *The Macrotheme Review*, *2*(4), 144-160.

Karaszewski, R., & Lis, A. (2014). Is leadership an antecedent of corporate social responsibility? The study in the context of positive organisational potential. *Journal of Corporate Responsibility and Leadership*, *1*(1), 53-70. http://dx.doi.org/10.12775/JCRL.2014.004

Kendall, H., Naughton, P., Kuznesof, S., Raley, M., Dean, M., Clark, B., ... & Brereton, P. (2018). Food fraud and the perceived integrity of European food imports into China. *PloS one*, *13*(5), e0195817. https://doi.org/10.1371/journal.pone.0195817

Khattak, M. N., Khan, M. B., Fatima, T., & Shah, S. Z. A. (2018). The underlying mechanism between perceived organizational injustice and deviant workplace behaviors: Moderating role of personality traits. *Asia Pacific Management Review*. https://doi.org/10.1016/j.apmrv.2018.05.001

Kirezieva, K., Jacxsens, L., Hagelaar, G. J.L.F., van Boekel, M.A.J.S., Uyttendaele, M., & Luning, P.A. (2015). Exploring the influence of context on food safety management: Case studies of leafy greens production in Europe. *Food Policy*, *51*, 158–170. DOI: 10.1016/j.foodpol.2015.01.005

Kirezieva, K., Nanyunja, J., Jacxsens, L., van der Vorst, J.G.A.J., Uyttendaele, M., & Luning, P.A. (2013). Context factors affecting design and operation of Food Safety Management Systems in the fresh produce chain. *Trends in Food Science & Technology*, *23*, 108-127. DOI: 10.1016/j.tifs.2013.06.001

Kleboth, J. A., Luning, P. A., & Fogliano, V. (2016). Risk-based integrity audits in the food chain–A framework for complex systems. *Trends in Food Science & Technology*, *56*, 167-174. https://doi.org/10.1016/j.tifs.2016.07.010

Lean, H. H., Ang, W. R., & Smyth, R. (2015). Performance and performance persistence of socially responsible investment funds in Europe and North America. *The North American Journal of Economics and Finance*, *34*, 254-266. http://mpra.ub.uni-muenchen.de/59119/

Lebaron, G., & Lister, J. (2015). Benchmarking global supply chains: the power of the 'ethical audit' regime. *Review of International Studies*, *41*(5), 905-924. https://doi.org/10.1017/S0260210515000388

Lee, J.E., Almanza, B.A., Jang, S., Nelson, D.C & Ghiselli, R.F. (2012). Does transformational leadership style influence employees' attitudes toward food safety practices? *International Journal of Hospitality Management*, 33, 282-293. https://doi.org/10.1016/j.ijhm.2012.09.004

Leighton, P. (2016). Mass salmonella poisoning by the peanut corporation of America: State-corporate crime involving food safety. *Critical Criminology*, *24*(1), 75-91.

Lewis, P. (1985), 'Defining 'business ethics': like nailing jello to a wall, *Journal of Business Ethics*, 4, 377-83. https://doi.org/10.1007/BF02388590

Li, H., Sarathy, R., Zhang, J., & Luo, X. (2014). Exploring the effects of organizational justice, personal ethics and sanction on internet use policy compliance. *Information Systems Journal*, *24*(6), 479-502. https://doi.org/10.1111/isj.12037

Lind, E. A, & Tyler, T. (1988). *The social psychology of procedural justice.* New York: Plenum Press.

Lord, N., Spencer, J., Albanese, J., & Elizondo, C. F. (2017). In pursuit of food system integrity: the situational prevention of food fraud enterprise. *European Journal on Criminal Policy and Research*, *23*(4), 483-501. https://doi.org/10.1007/s10610-017-9352-3

Lu, R., Sadiq, S., & Governatori, G. (2008). Measurement of compliance distance in business processes. *Information Systems Management*, *25*(4), 344-355 https://doi.org/10.1080/10580530802384613

Luning, P.A., Marcelis, W. J., van Boekel, M.A.J.S., Rovira, J., Uyttendaele, M., & Jacxsens, L. (2011). A tool to diagnose context riskiness in view of food safety activities and microbiological safety output*. Trends in food Science & technology 22(1),* S67-S79. DOI: 10.1016/j.tifs.2010.09.009

Luning, P.A., and Marcelis, W.J. (2009). Food Quality Management: technological and managerial principles and practices. Wageningen Academic Publishers, Wageningen. The Netherlands. ISBN 987-90-8686-116-3.

Luning, P. A., & Marcelis, W. J. (2006). A techno-managerial approach in food quality management research. *Trends in Food Science & Technology*, *17*(7), 378-385. https://doi.org/10.1016/j.tifs.2006.01.012

Manning, L. (2016). Food fraud, policy and food chain. *Current Opinions in Food Science*, 10, 16–21. doi:10.1016/j.cofs.2016.07.001

Manning, L. (2018) Food supply chain fraud: The economic, environmental and socio-political consequences. In: D. Barling & J. Fanzo (Eds.), Advances in food security and sustainability (Vol. 3). Academic Press.

Manning, L. (2019a). Corporate responsibility in a transitioning food environment: truth-seeking and truth-telling. In Piatti, C. Food Tech Transitions- Reconnecting Agri-Food, Technology and Society. Springer.

Manning, L. (2019b). Food defence: Refining the taxonomy of food defence threats. *Trends in food science & technology*. 85, 107-115 https://doi.org/10.1016/j.tifs.2019.01.008

Manning, L., Luning, P., & Wallace, C. (2019) *The Evolution and Cultural Framing of Food Safety Management Systems – Where from and Where next? Comprehensive Reviews in Food Science and Food Safety.* ISSN 1541-4337 (In Press)

Manning, L., & Monaghan, J. (2019). Integrity in the fresh produce supply chain: solutions and approaches to an emerging issue. *The Journal of Horticultural Science and Biotechnology*, *94*(4), 413-421. https://doi.org/10.1080/14620316.2019.1574613

Manning, L. (2017a). Food integrity. *British Food Journal*, *119*(1), 2-6. http://doi.org/10.1108/BFJ-09-2016-0446

936 Manning, L. (2017b). The interaction between organizational sub-cultures and its influence on food safety
937 management, Journal of Marketing Channels, 24 (3-4), 1-10
938 https://doi.org/10.1080/1046669X.2017.1393235
939 Manning, L. (2016). Food fraud: Policy and food chain. *Current Opinion in Food Science*, *10*, 16-21.
940 https://doi.org/10.1016/j.cofs.2016.07.001
941 Manning, M.L., Davidson, M., & Manning, R.L., (2005). Measuring tourism and hospitality employee
942 workplace perceptions. International Journal of Hospitality Management, 24(1), 75–90.
943 https://doi.org/10.1016/j.ijhm.2004.05.001
944 Marsh, J. (2018). Strawberry needle scare: Woman allegedly spiked punnets for revenge. Available at:
945 https://edition.cnn.com/2018/11/12/australia/australia-strawberry-needle-intl/index.html [Accessed 9
946 December 2019]
947 Marvin, H. J. P., Kleter, G. A., Frewer, L. J., Cope, S., Wentholt, M. T. A., & Rowe, G. (2009). A working
948 procedure for identifying emerging food safety issues at an early stage: Implications for European and
949 international risk management practices. *Food control*, *20*(4), 345-356.
950 https://doi.org/10.1016/j.foodcont.2008.07.024
951 Matos, K., O'Neill, O., & Lei, X. (2018). Toxic leadership and the masculinity contest culture: How “win or die”
952 cultures breed abusive leadership. *Journal of Social Issues*, *74*(3), 500-528.
953 https://doi.org/10.1111/josi.12284
954 McCann, D., Barrett, A., Cooper, A., Crumpler, D., Dalen, L., Grimshaw, K., Kitchin, E., Lok, K., Porteous, L.,
955 Prince, E. & Sonuga-Barke, E., (2007). Food additives and hyperactive behaviour in 3-year-old and 8/9-year-
956 old children in the community: a randomised, double-blinded, placebo-controlled trial. *The*
957 *Lancet*, *370*(9598), 1560-1567.
958 McCormack, K., Bronzo Ladeira, M., & Paulo Valadares de Oliveira, M. (2008). Supply chain maturity and
959 performance in Brazil. *Supply Chain Management: An International Journal*, *13*(4), 272-282.
960 https://doi.org/10.1108/13598540810882161
961 Meglino, B., & Korsgaard, A. (2004). Considering rational self-interest as a disposition: Organizational
962 implication of other orientation. *Journal of Applied Psychology*,
963 91(6), 946–959. http://dx.doi.org/10.1037/0021-9010.89.6.946

964 Mehta, S., Singh, T., Bhakar, S. S., & Sinha, B. (2010). Employee loyalty towards organization—a study of
965 academician. *International Journal of Business Management and Economic Research*, *1*(1), 98-108.
966 M
967 Merton, R.K. (1957), Social Theory and Social Structure (Revised Edition), Glencoe, IL.: Free Press
968 Mertens, W., Recker, J., Kummer, T. F., Kohlborn, T., & Viaene, S. (2016). Constructive deviance as a driver
969 for performance in retail. *Journal of Retailing and Consumer Services*, *30*, 193-203.
970 https://doi.org/10.1016/j.jretconser.2016.01.021
971 Merton, R.K. (1957). Social Theory and Social Structure (Revised Edition) Free Press Glencoe IL.
972 Mettler, T., & Rohner, P. (2009). Situational maturity models as instrumental artifacts for organizational
973 design. Malvern, PA, USA: DESRIST09
974 Mikes, A. (2009). Risk management and calculative cultures. *Management Accounting Research*, *20*(1), 18-
975 40. https://doi.org/10.1016/j.mar.2008.10.005
976 Moorman, R. H., Blakely, G. L., & Niehoff, B. P. (1998). Does perceived organizational support mediate the
977 relationship between procedural justice and organizational citizenship behaviour? *Academy of Management*
978 *journal*, *41*(3), 351-357. https://doi.org/10.5465/256913
979 Moorman, R. H. (1991). Relationship between organizational justice and organizational citizenship
980 behaviors: Do fairness perceptions influence employee citizenship?. *Journal of applied psychology*, *76*(6),
981 845. http://dx.doi.org/10.1037/0021-9010.76.6.845
982 Moschis, G. P., & Cox, D. (1989). Deviant consumer behavior in *North American Advances* in Consumer
983 Research, Vol. 16 eds. Srull, T.K, Provo Utah. pp. 732-737
984 Moy, G. G. (2018). The role of whistleblowers in protecting the safety and integrity of the food supply. *NPJ*
985 *science of food*, *2*(1), 1-5.
986 Muloi, D., Alarcon, P., Ombui, J., Ngeiywa, K.J., Abdullahi, B., Muinde, P., Karani, M.K., Rushton, J. & Fèvre,
987 E.M., (2018). Value chain analysis and sanitary risks of the camel milk system supplying Nairobi city,
988 Kenya. *Preventive veterinary medicine*, *159*, 203-210. https://doi.org/10.1016/j.prevetmed.2018.09.010
989 Nanyunja, J., Jacxsens, L., Kirezieva, K., Kaaya, A. N., Uyttendaele, M., & Luning, P. A. (2016). Shift in
990 performance of food safety management systems in supply chains: case of green bean chain in Kenya
991 versus hot pepper chain in Uganda. *Journal of the Science of Food and Agriculture*, *96*(10), 3380-3392.
992 https://doi.org/10.1002/jsfa.7518

Nayak, R., & Waterson, P., (2016). 'When Food Kills': A socio-technical systems analysis of the UK Pennington 1996 and 2005 E. coli O157 Outbreak reports. *Safety Science*, *86*, 36-47. DOI: 10.1016/j.ssci.2016.02.007

Norman, W. (2011). Business ethics as self-regulation: Why principles that ground regulations should be used to ground beyond-compliance norms as well. *Journal of Business Ethics*, *102*(1), 43-57. https://doi.org/10.1007/s10551-011-1193-2

Organ, D. W. (1988). Organisational citizenship behavior: The good soldier syndrome. Lexington, MA: Lexington Books.

Othman, R., Ahmad, Z.A., & Zailani, S., (2009). The effect of institutional pressures in the Malaysian Halal Food Industry, *International Business Management*, *3(*4), 80-84

Paine, L. S. (1994). Managing for organizational integrity. *Harvard business review*, *72*(2), 106-117.

Pelletier, K. L. (2010). Leader toxicity: An empirical investigation of toxic behavior and rhetoric. *Leadership*, *6*(4), 373-389. ttps://doi.org/10.1177/1742715010379308

Rae, K., & Subramaniam, N. (2008). Quality of internal control procedures: Antecedents and moderating effect on organisational justice and employee fraud. *Managerial Auditing Journal*, *23*(2), 104-124. https://doi.org/10.1108/02686900810839820

Reed, G. E. (2004). Toxic leadership. *Military review*, *84*(4), 67-71.

Reefke, H., & Sundaram, D. (2018). Sustainable supply chain management: Decision models for transformation and maturity. *Decision Support Systems*, *113*, 56-72. https://doi.org/10.1016/j.dss.2018.07.002

Renn, R. W., Steinbauer, R., & Biggane, J. (2018). Reconceptualizing self-defeating work behaviour for management research. *Human Resource Management Review*, *28*(2), 131-143. https://doi.org/10.1016/j.hrmr.2017.05.012

Renn, R. W., Allen, D. G., & Huning, T. M. (2011). Empirical examination of the individual-level personality-based theory of self-management failure. *Journal of Organizational Behavior*, *32*(1), 25-43. https://doi.org/10.1002/job.667

Renn, R. W., Allen, D. G., Fedor, D. B., & Davis, W. D. (2005). The roles of personality and self-defeating behaviors in self-management failure. *Journal of Management*, *31*(5), 659-679. https://doi.org/10.1177/0149206305279053

Rigtering, J. P. C., & Weitzel, U. (2013). Work context and employee behaviour as antecedents for intrapreneurship. *International Entrepreneurship and Management Journal*, *9*(3), 337-360. https://doi.org/10.1007/s11365-013-0258-3

Robertson, C., & Fadil, P. A. (1999). Ethical decision making in multinational organizations: A culture-based model. *Journal of Business Ethics*, *19*(4), 385-392. https://doi.org/10.1023/A:1005742016

Robinson, G., & McNeill, F. (2008). Exploring the dynamics of compliance with community penalties. *Theoretical Criminology*, *12*(4), 431-449. https://doi.org/10.1177/1362480608097151

Robinson, S. L., & Bennett, R. J. (1995). A typology of deviant workplace behaviors: A multidimensional scaling study. *Academy of Management Review*, 38(2), 555–572. https://doi.org/10.5465/256693

Sandberg, J. (2011). Socially responsible investment and fiduciary duty: Putting the freshfields report into perspective. *Journal of Business Ethics*, *101*(1), 143-162. https://doi.org/10.1007/s10551-010-0714-8

Schein, E.H., (2004). Organizational Culture and Leadership. Jossey-Bass, San Francisco.

Sekerka, L. E. (2012). Compliance as a subtle precursor to ethical corrosion: A strength-based approach as a way forward. *Wyo. L. Rev.*, *12*, 277. Available at: http://repository.uwyo.edu/wlr/vol12/iss2/1

Shnayder, L., Van Rijnsoever, F. J., & Hekkert, M. P. (2016). Motivations for Corporate Social Responsibility in the packaged food industry: an institutional and stakeholder management perspective. *Journal of Cleaner Production*, *122*, 212-227. https://doi.org/10.1016/j.jclepro.2016.02.030

Shore, L. M., & Shore, T. H. 1995. Perceived organizational support and organizational justice. In Cropanzano & K. M. Kacmar (Eds.), Organizational politics, justice, and support: Managing the social climate of the workplace 149-164. Westport XT. Quorum.

Skarlicki, D. P., Van Jaarsveld, D. D., & Walker, D. D. (2008). Getting even for customer mistreatment: The role of moral identity in the relationship between customer interpersonal injustice and employee sabotage. *Journal of applied psychology*, *93*(6), 1335.

Skarlicki, D. P., & Folger, R. (1997). Retaliation in the workplace: The roles of distributive, procedural, and interactional justice. *Journal of applied Psychology*, *82*(3), 434. http://dx.doi.org/10.1037/0021-9010.82.3.434

Soon, J. M., & Manning, L. (2017). Whistleblowing as a countermeasure strategy against food crime. *British Food Journal*, *119*(12), 2630-2652. https://doi.org/10.1108/BFJ-01-2017-0001

Soon, J. M., Manning, L., & Smith, R. (2019). Advancing understanding of pinch-points and crime prevention in the food supply chain. *Crime Prevention and Community Safety*, *21*(1), 42-60. https://doi.org/10.1057/s41300-019-00059-5

Sparks, R. (2008). Socially Responsible Investment. Volume II. Investment Management and Finance Management. John Wiley & Sons Inc. https://doi.org/10.1002/9780470404324.hof002014

Spreitzer, G.M. & Sonenshein, S. (2003) "Positive deviance and extraordinary organizing." In Cameron, K.S., Dutton, J.E., and Quinn, R.E. (Eds.) Positive Organizational Scholarship: Foundations of a New Discipline. San Francisco: Berrett-Koehler.

Steel, P., Brothen, T., & Wambach, C. (2001). Procrastination and personality, performance, and mood. *Personality and Individual Differences*, 30, 95–106. https://doi.org/10.1016/S0191-8869(00)00013-1

Stemn, E., Bofinger, C., Cliff, D., & Hassall, M. E. (2019). Examining the relationship between safety culture maturity and safety performance of the mining industry. *Safety science*, *113*, 345-355. https://doi.org/10.1016/j.ssci.2018.12.008

Sykes, J. B. (1976). The Concise Oxford Dictionary.University Press, Oxford.

Taye, M. T., & Sang, G. (2017). Commitment of employees: The case of dormitory service administration at higher education in Beijing, China. *International Journal of Research*, *6*(1), 91-98. DOI: 10.5861/ijrsm.2017.1768

Taylor, S. S. (2002). Overcoming aesthetic muteness: Researching organizational members' aesthetic experience. *Human Relations*, *55*(7), 821-840. https://doi.org/10.1177/0018726702055007542

Thau, S., Aquino, K., & Poortvliet, P. M. (2007). Self-defeating behaviors in organizations: The relationship between thwarted belonging and interpersonal work behaviors. *Journal of Applied Psychology*, 92(3), 840–847. http://dx.doi.org/10.1037/0021-9010.92.3.840

Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases prosocial behavior. *Journal of Personality and Social Psychology*, 92, 56–66.

Vadera, A. K., Pratt, M. G., & Mishra, P. (2013). Constructive deviance in organizations: Integrating and moving forward. *Journal of Management*, *39*(5), 1221-1276. https://doi.org/10.1177/0149206313475816

Van Rooij, B., & Fine, A. (2018). Toxic corporate culture: assessing organizational processes of deviancy. *Administrative Sciences*, *8*(3), 23. https://doi.org/10.3390/admsci8030023

Verhezen, P. (2010). Giving voice in a culture of silence. From a culture of compliance to a culture of integrity. *Journal of Business Ethics*, *96*(2), 187-206. https://doi.org/10.1007/s10551-010-0458-5

Victor, B. & Cullen, J.B. (1987), A theory and measure of ethical climate in organizations, in Frederick, W.C. and Preston, L. (Eds), Research in Corporate Social Performance and Policy, 9, 51-71. JAI Press Inc., Greenwich, CT

Wang, C. S., Van Fleet, D. D., & Mishra, A. K. (2017). Food integrity: a market-based solution. *British Food Journal*, *119*(1), 7-19. https://doi.org/10.1108/BFJ-04-2016-0144

Warren, D. E. (2003). Constructive and destructive deviance tn organizations. *Academy of management Review*, *28*(4), 622-632. https://doi.org/10.5465/amr.2003.10899440

Webster, V., Brough, P., & Daly, K. (2016). Fight, flight or freeze: Common responses for follower coping with toxic leadership. *Stress and Health*, *32*(4), 346-354. https://doi.org/10.1002/smi.2626

Wellen, J. M., & Neale, M. (2006). Deviance, self-typicality, and group cohesion: The corrosive effects of the bad apples on the barrel. *Small Group Research*, *37*(2), 165-186. https://doi.org/10.1177/1046496406286420

Wolf, K. (2018). Power struggles: A sociological approach to activist communication. *Public Relations Review*, *44*(2), 308-316. https://doi.org/10.1016/j.pubrev.2018.03.004

Wolters, C. (2003). Understanding procrastination from a self-regulated learning perspective. *Journal of Educational Psychology,* 95(1), 179–187. http://dx.doi.org/10.1037/0022-0663.95.1.179

Yen, C. H., & Teng, H. Y. (2013). The effect of centralization on organizational citizenship behavior and deviant workplace behavior in the hospitality industry. *Tourism Management*, *36*, 401-410. https://doi.org/10.1016/j.tourman.2012.10.003

Yıldız, B., Erat, S., Alpkan, L., Yıldız, H., & Sezen, B. (2015). Drivers of innovative constructive deviance: A moderated mediation analysis. *Procedia-Social and Behavioral Sciences*, *195*, 1407-1416. https://doi.org/10.1016/j.sbspro.2015.06.436

Yildiz, B., & Alpkan, L. (2015). A theoretical model on the proposed predictors of destructive deviant workplace behaviors and the mediator role of alienation. *Procedia-Social and Behavioral Sciences*, *210*, 330-338. https://doi.org/10.1016/j.sbspro.2015.11.373

Yukl, G., & Van Fleet, D. D. (1992). Theory and research on leadership in organizations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (pp. 147-197). Palo Alto, CA, US: Consulting Psychologists Press.

1110 **Table 1. Definitions of food integrity**

Definition	Source
Food integrity encompasses food safety, security, traceability, origin authenticity, quality attributes and product information resulting in a final food product with integrity.	Davidson et al., (2017)
Food integrity is ensuring that food which is offered for sale or sold is not only safe and of the nature, substance and quality expected by the purchaser, but also captures other aspects of food production, such as the way it has been sourced, procured and distributed and being honest about those elements to consumers.	Elliott Review (2014)
Food integrity refers to an evolving perspective of quality corresponding to the changing nature of food production, from conformance to requirements (Crosby, 1979), total quality control (Feigenbaum, 1983), customer expectations (Ishikawa, 1985), to an open-systems view of total quality management (Deming, 1986).	Wang et al., (2017)
Food integrity in food supply chains drives the need to demonstrate that the product is what it purports to be (product integrity); secondly that food products are produced in compliance with defined standards (process integrity); thirdly that the standards drive ethical corporate behaviour (people integrity); and finally that the data associated with the ingredients, materials, services and product (data integrity) is valid so actors can verify the intrinsic and extrinsic characteristics of the product	(Manning, 2016; 2018; Manning & Monaghan, 2019).

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Table 2. Comparison of compliance based and integrity based systems (Adapted from Paine, 1994)

Elements	Compliance-based systems	Integrity-based systems
Company commitments	Mission statement and company policy drives compliance.	Code of conduct that highlights guiding values and commitments that make sense and are clearly communicated.
Ethos	Conformity with externally imposed standards.	Self-governance according to chosen organizational standards.
Objective	Prevent criminal misconduct and reduce organizational risk through compliance with legal and market standards.	Ensure responsible conduct through the development of company values and aspirations, social obligations including legal compliance.
Methods	Prescriptivism, organizational systems and decision processes, auditing and control, sanctions, training	Leadership, accountability, organizational systems and decision processes, auditing and control, sanctions, training.
Company leaders	Committed to ensuring compliance with internal and external standards.	Personally committed, credible and willing to take action on the values they espouse.
Organization's systems and procedures	Support and reinforce the need for compliance with requirements.	Support and reinforce the organization's values.
Reporting and investigation	Mechanisms are in place for reporting and investigating non-compliance.	Mechanisms are in place for reporting and investigating non-compliance.
Verification activities	Implemented to ensure compliance e.g. audits.	Implemented to ensure compliance e.g. audits.
Decision-making	Managers have the decision-making skills, knowledge and competencies to make compliance orientated decisions on a day-to-day basis.	Espoused values are integrated into management channels for decision-making and are reflected in the organization's critical activities. Managers have the decision-making skills, knowledge and competencies to make ethically sound decisions on a day-to-day basis.

Table 3. Typology of organizational climates (Adapted from Victor & Cullen, 1987; Appelbaum et al. 2005; 2007)

Characteristic	Description
Caring	In a caring climate, employees within the organization are benevolent and genuinely interested in the welfare of others, both within and outside their organizations. The actions of a group demonstrating this climate would show a concern for all those affected by their decisions.
Efficiency	In this climate, the right way to do things within the organization is the most efficient. Each organization will use a range of metrics to define efficiency e.g. using less resources (including people), producing more from the same input, minimizing internal administration and testing costs etc.
Independence	In the independence climate, employees are strongly guided by their own sense of right and wrong.
Instrumental	In the instrumental climate, members of an organization look out for their own self interest (egoism), often to the detriment of others. Instrumental decision-making drives an organizational climate where the "end always justifies the means." i.e. the goal, objective or consequence will always justifying the means or actions that will deliver that consequence or objective.
Professional	Employees are principle based and compliance focused follow the rules and guidelines set out by their professional organization or the laws set out by the government. In this culture employees look outside the organization for cues concerning how to behave ethically.
Rules	In the rules and principles based ethical climate, workers are expected to be compliance focused and strictly follow the internal rules, protocols and procedures of their department or organization.

Table 4 Locus of analysis to determine an organization's ethical climate (Adapted from Appelbaum et al. 2005)

		Locus of analysis		
		Individual (Micro level)	**Local (Meso-level)**	**Wider environment (Macro-level)**
Ethical Criterion	**Egoism (Self-interest)**	Self-interest	Company Profit	Efficiency
	Benevolence (Greatest good for the most people)	Friendship	Team Interest	Social Responsibility
	Principle (Adherence to standards and procedures)	Personal Morality	Company rules and procedures	Laws and professional codes and guidelines

Table 5. Types of constructive deviance (Adapted from Galperin & Burke, 2006)

Typology		Definition	Behaviors
Organizational constructive deviance	Innovative organizational constructive deviance	Innovative behaviors and unconventional ways to help the organization.	Ways to perform day-to-day procedures and developing creative solutions to problems.
	Challenging organizational constructive deviance	Behaviors that outwardly challenge the existing norms of the organization and break the rules in order to help the organization.	Breaking and bending the rules to perform your job and violating company procedures to solve a customer's problem, are included in this category
Individual constructive deviance	Interpersonal constructive deviance	Behaviors that brings about a positive organizational change	Disobeying the orders or reporting a wrong doing to co-workers

Table 6. Toxic organizational norms and processes (Adapted from van Rooj & Fine, 2018)

Types of Toxic Norms	Toxic processes	
Enabling rule breaking	Create opportunities to violate rules.	Bypass procedures, controls and protocols.
	Condone and normalize rule breaking. Neutralize impact of offending by employees.	Reduce potential for detection or sanctions.
Obstructing compliance	Lack of managerial support to follow the law.	Re-calibrate employees away from norms of legal compliance.
Directly opposed to legal compliance	Resist legal compliance. Undermine existing corporate checks and audits.	Normalize deviance from legal and market requirements.
Dilute or deny positive corporate values	Delegitimize positive values and ethics. Legitimize negative values.	Normalize unethical behavior.
Developing goals and targets that cannot be met by legitimate means	Normative acceptance of unachievable goals and targets.	Pressurize or coerce employees to meet set targets and goals by any means including illegal or unethical activity

Table 7. Types of self-defeating work behavior (Adapted from: Baumeister & Scher 1988; Cudney & Hardy, 1993; Baumeister, Heatherton & Tice, 1994; Goulston & Goldberg, 1996; Hartzler & Brownson, 2001; Steel, Brothen & Wambach, 2001; Wolters, 2003; Meglino & Korsgaard, 2004; Goulston, 2005; Renn, Allen, Fedor & Davis, 2005; Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007; Thau, Aquino & Poortvliet, 2007; Renn, Allen, & Huning, 2011; Renn, Steinbauer & Biggane, 2018)

Category	Types of behaviour
Job performance	Being unprepared. Choking under pressure. Escalation of commitment to a failing course of action. Failing to delegate Flawed goal setting. Impulsiveness. Letting fear paralyze you. Making excuses. Maladaptive coping strategies Negligence of personal health [and safety] Poor ability in goal setting. Poor quality decisions, Procrastination. Quitting too soon. Self-regulation failure. Self-handicapping. Weak self-management/self-discipline. Working against best interests.
Negative work attitudes	Chronic pessimism. Fear of failing Fear of learning new things. Feelings of hurt. Feeling sorry for oneself. Focusing on self-interest. Learned helplessness/ being too needy. Negative self-attributions/ self-blame. Negative self-talk. Self-defeating/ negative thought patterns. Self-sabotage/ choosing to suffer. Worrying about what others think.
Work relationships	Avoidance of intimacy. Blaming others. Defensiveness. Expecting praise. Face work. Fearing confrontation.Holding a grudge. Ineffective ingratiation. Insensitive to others. Lack of prosocial behavior. Not asking for what you need.Not listening. People pleasing. Poor interpersonal relationships. Rejecting help from others. Renegade attention. Shyness. Surrounded by negative people.

Table 8. Typology of counter-productive workplace behaviors (Adapted from Robinson & Bennett; Gruys & Sackett, 2003; Renn, Steinbauer & Biggane, 2018)

Gruys & Sackett (2003)	Robinson & Bennet (1995)	Renn, Steinbauer & Biggane, (2018)
Misuse of Time and Resources	**Production deviance**: Violating organizational norms by purposefully producing output of poor or low quality or quantity, slowing production to have more breaks, wasting resources.	Job performance
Poor Quality Work		
Theft and Related Behavior	**Property deviance**: Violating organizational norms by purposefully damaging employer's tangible property, sabotaging equipment, lying about the time worked (false "clocking-in-and-out") or removing employers property (theft) without authorization.	
Destruction of Property		
Poor Attendance/ Absenteeism		
Misuse of Information	**Political deviance**: Violating organizational norms by working in such a way as to put co-workers at a social disadvantage e.g. by showing favoritism, gossiping about or blaming co-workers or negatively competing with co-workers.	Work relationships
Unsafe Behavior	**Personal aggression**: Violating organizational norms by demonstrating interpersonal deviant behavior that is hostile or aggressive e.g. physical aggression, bullying, harassment, verbal abuse, endangering co-workers e.g. through poor health and safety practice.	
Alcohol Use		
Drug Use		
Inappropriate Verbal Actions		
Inappropriate Physical Actions		

Table 9. Antecedents of destructive deviant behavior and counterproductive work behavior (Adapted from Yildiz & Alpkan, 2015; Dirican & Erdil, 2016).

Factor	Antecedent
Destructive deviant behavior	Ethical climate. Ethical ideology. Ethical orientation. Guilt proneness. Machiavellianism. Moral disengagement. Negative affect. Organizational climate. Organizational commitment. Organizational culture. Organizational justice. Organizational structure. Personality traits. Work alienation.
Counterproductive work behavior	Antisocial behavior. Bullying. Destructive/hazardous behavior. Deviance. Emotional abuse. Organizational aggression. Retaliation. Revenge.

Table 10. The Ethical-Integrity Performance Continuum (Adapted from Verhezen, 2010; Sekerka, 2012)

Ethical Weakness	Ethical Compliance	Ethical Strength
Does harm e.g. sells unsafe food or illegal food products that do not comply with labelling and regulatory requirements.	Does no harm so food meets minimum legal requirements, complies with specifications and is safe for consumers.	Reduces harm and delivers over and above legal and supply chain standards. e.g. adopts animal welfare or sustainability standards that exceed legal or supply chain requirements.
Non-adherence to regulation or market standards (may be intentional or unintentional) e.g. sends material to customer that does not comply with the specification.	Adherence to regulation or market standards i.e. complies with legal and market requirements.	Superseded regulations and advocates social responsibility as an inherent strand of the organization's purpose i.e. adopts a corporate social responsibility strategy
Sanctions and punishments for non-compliance i.e. is driven to comply with standards only because of the impact of sanctions e.g. prosecution or supply chain fines.	Compliance-based mindset, training focused on compliance with systems, standards and procedures, compliance driven performance goals.	Ethics embedded into the criteria for development of organizational goals and continuous improvement is embedded into systems, standards and procedures.
Failure to demonstrate organizational integrity i.e. forms transactional rather than trust and values based relationships with suppliers and customers.	Integrity focuses on least cost compliance. Compliance-based management system.	Management system focused on integrity, building trust and values internally within the organization and with other supply chain actors. Integrity based management system.
Deficient approach i.e. the organization acts when non-compliance is identified and there is an expectation to take action.	Reactive, deficit-based, problem-orientated approach i.e. organization implements a corrective action process when non-compliance is identified.	Proactive, agile, solution-focused approach i.e. organization implements a horizon scanning approach, identifying potential issues and implements a proactive preventative action programme.
Deficient.	Status quo "band-aid" focus.	Continuous improvement focus.
Destructive deviance that can lead to negative organizational climate that is instrumental and where the "end justifies the means."	Compliance	Constructive deviance that drives a proactive organizational climate through innovation and continuous improvement.
Deficient	Transactional	Transformative
Deficient	Lacking pro-social behavior	Embedding pro-social behavior
Moral Weakness	Moral Baseline (minimum) Moral muteness	Moral Strength
 Legal liability Moral liability		

Table 11. Cultural dimensions and components of organizations (Adapted from Jespersen, Griffiths, Maclaurin, Chapman & Wallace, 2016).

Dimension	Components	Capability
External adaptation	Mission and goals, means (e.g., day-to-day behaviors, skills, knowledge, time and technology) to reach goals, degree of autonomy, how does the organization decide what to measure, measures (what and how), how to judge success, remediate and repair processes, and crisis history.	Perceived value
Human nature, activity and relationship	Theory x/y managers, the doing/being/being-in-becoming orientation, and four basic problems solved in a group: identity and role; power and influence; needs and goals; acceptance and intimacy, individualism/groupism, power distance and accepted behaviors & practices.	Process thinking
Internal integration	System of communication, common language, group selection and exclusion criteria, allocation systems (e.g., influence, power and authority), rules for relationships and systems for rewards and punishment.	People systems
Reality and truth	High vs. low context, definition of truth, information, data, and knowledge needs; training and competencies; systems (e.g., sign-off), continuous improvement	Technology enabled
Time and space	Four different dimensions for characterizing time orientation; assumptions around time management	Tools and infrastructure

Models defined in the literature.											Proposed model
Goncalves Filho et al. (2010).		Reefke & Sundaram (2018)		Stemn et al. (2019)		Enke et al. (2017).		Jespersen et al. (2016; 2019)			
Stages of cultural maturity											
		1	**Unaware and non-compliant** - unaware of regulations and standards	1	**Basic culture**– no culture	1	**Initial** - No standard is defined			1	**Unaware and non-compliant** with both legal and moral requirements,
								1	**Doubt – minimal compliance and unstructured problem solving**	2	**Minimal compliance** some awareness but unstructured and poorly focused response by organization
		2	**Ad- hoc and basic compliance** - compliance based measures but disconnected from strategic direction	2	**Reactive culture** reacting to events or incidents			2	**React to** – reactive culture lack of preventative systems and processes	3	**Reactive approach** to developing a compliance based systems with limited preventive measures;
1	**Compliance based systems**	3	**Defined and compliant** - compliance with regulations and standards	3	**Compliant culture** - compliant with standards	2	**Managed** – organizational structures and work processes are defined	3	**Know of** – organizational structures in place and responsibilities identified and communicated	4	**Compliance based system** that addresses legal liability.
2	**Compliance based systems** linked to accountability dimensions	4	**Links and exceeds compliance** - compliance with regulations and standards and performance measurement system			3	**Defined** – organizational structures and work processes are defined and described in detail			5	**Compliance based system** that is positioned above minimum legal standards
		5	**Integrated standards and proactive measures** – above compliance	4	**Proactive culture**– improving systems	4	**Quantitatively measures** – organizational structures and work processes are defined and described in detail. Compliance and implementation are checked regularly	4	**Predict** – processes are developed, data is collected and analysed and there is a focus on improvement		
3	**Management systems based on continuous improvement**	6	**Extended leadership** - management systems and processes are managed through continuous improvement	5	**Resilient** – embedded culture	5	**Optimizing culture** – organizational structures and processes are defined and described in detail. Its regular verification serves as a starting point for improvement.	5	**Internalize –** business improvement and horizon scanning embedded into organizational culture	6	**Optimizing culture** and a level of cultural maturity where management systems and processes are managed through continuous improvement activities
										7	**Integrity based organizational climate** that exceeds the requirements of minimum legal and moral liability and drives continuous improvement.

Figure 1. Comparison of cultural maturity models that map the translation from unawareness through to compliance based systems through to organizational cultures that focus on continuous improvement to integrity based organizational climate

Values traits that determine cultural and climate maturity (Synthesized from the three models)	Goncalves Filho et al. (2010).	Stemn et al. (2019)	Jesperson et al.(2016; 2019)
Person focused			
Care and respect		Care and respect	
Integrity and trust			Integrity and trust
Commitment and accountability		Commitment and accountability	
Being responsible			Being responsible
Leadership		Leadership	
Involvement: degree of engagement, collective and individual participation of staff	Involvement: degree of engagement and participation of staff	Employee involvement and coaching	Together we make a difference
System focused			
Information symmetry – sharing of information.	Information: formalized system and familiarity with that system		
Organizational learning – organizations ability to analyse, learn and inform and engage its staff	Organizational learning: organization's ability to analyse and inform	Monitoring, audit and review & learning from incidents	
Clear communication with staff	Communication: communication channels in place	Communication	Competently communicating
Commitment to and investment in staff – recognition, reward	Commitment: support provided by the organization planning, priorities, rewards, training rewards, investments,	Policy and commitment & training and competency	Reward and recognize
Coherence between formal systems and practice	Coherence between systems and practice		
Risk perception, risk assessment and risk management		Risk and Hazard Management	Risk perception
Compliance or integrity focused		Regulatory requirements, objectives, targets and performance measurements, operational control	Quality of all we do
Innovate, embrace and drive change			Technology enabled success Innovate, embrace and drive change, data and reporting

Figure 2. Value traits (characteristics) that demonstrate cultural and climate maturity