

# Misconduct and Risk Climate in Banking: Development of a Multidimensional Measurement Scale

**Title (short form):** Misconduct and risk climate scale

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## Abstract

Misconduct and risk culture are two critical issues in bank supervision today. This paper reviews recent studies and regulatory documents on both topics to further our understanding of the dimensions that underlie these new, distinct risks to the global banking sector. Based on this review, a multidimensional measurement scale for misconduct and risk climate (M&R climate) is subsequently developed and validated. The scale obtained provides a tool in line with the leading guidelines and recommendations issued by international standard-setting bodies aimed at assessing M&R climate and monitoring the prevalence of misconduct and excessive risk-taking behaviours in banking.

## Policy implications

- The banking sector has lost the trust of the public, and needs to earn it back.
- Some types of misconduct, like money laundering, tax evasion and other criminal activities entail severe risks to global security.
- Banking culture can be used to prevent future risks for the solvency of banks and for the stability of the global financial system itself.
- The developed M&R climate measurement scale is useful both in the management or supervision of the banking culture and in academic research.

## About the authors

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# Misconduct and Risk Climate in Banking: Development of a Multidimensional Measurement Scale

## 1. Introduction

The motivation for this research arose within the context of the calls for a reform in banking culture and the ensuing public debate. The scandals stemming from the manipulation of Libor rates (2012) and foreign exchange rates (2014), coupled with the accumulation of court rulings against banks for abusive trading practices, spotlighted a banking culture characterized by very poor standards of conduct (UK Parliamentary Commission on Banking Standards, 2013), firmly rooted in the corporate values and business practices of some entities (Salz, 2013). They also contributed to popularizing the term 'misconduct risk'.

According to the definition established by the European Systemic Risk Board (ESRB, 2015), misconduct risk refers to risks attached to the way in which a firm and its staff conduct themselves, and to how customers and investors are treated. Misconduct risk exists not only when there is non-compliance with laws, norms established by the regulators or internal codes and norms, but also when the behaviour of the bank or its employees damages the integrity of the market through collusion or harms investors and customers (e.g. through mis-selling of financial products to retail and business clients). Some types of misconduct, like money laundering, tax evasion and other criminal activities, also entail severe risks to global security.

Misconduct risk is substantially related to banking culture (Cohn et al., 2014), being considered a significant source of systemic risk, especially when this is widespread in the industry (Parajon Skinner, 2016). In view of its scale and consequences, misconduct risk is now very much a key issue on the agenda to reform bank culture (FCA, 2018).

Actually, the debate on the reform of bank culture had begun some years earlier in the banking sector itself in the wake of the financial crisis and the recognition that risk culture played an important role in determining the quality of banks' risk management (IIF, 2009). At that time, awareness arose for the need to undertake a genuine cultural reform in the banking sector in order to restore trust in the industry (Llewellyn, 2014).

Nowadays, different aspects of banking culture (risk culture, the culture of compliance, misconduct risk) are carefully examined by bank regulators to foster new ethics of responsibility and prudence. Via this supervision, regulators attempt to anticipate and prevent future risks for the solvency of banks and for the stability of the global financial system itself (DNB, 2015).

The topic of bank culture has received a great deal of attention, as evidenced by the large number of reports and regulatory documents published in this regard. There is also a growing array of studies examining the role of banking culture in the academic field. However, this research has possibly made less progress in actually conceptualizing and measuring banking culture itself. To advance in this regard, Sheedy et al. (2017) opened up a new line of research with the introduction of the concept of risk climate, useful to measure and assess the risk

environment within financial institutions. As we shall see below, culture and climate are two highly related, yet distinct concepts.

Managers and practitioners care little about academic distinctions between culture and climate, sometimes using the term culture in relation to methodologies and concepts related to organizational climate (Schneider et al., 2013). The concept of organizational climate is essentially empirical, as it aims to measure employees' perceptions about behaviours that organizations reward and expect (what the organization considers desirable behaviours).

The present paper contributes to this line of research by developing a new concept of climate characteristic of the organizational environment in the banking sector, the 'misconduct and risk climate' (M&R climate). It measures the extent to which bank employees believe that their organization values prudence in risk management and compliance with norms, codes and laws, including the focus on satisfying the customer's interests. With respect to previous research, it is a new conceptualization or type of organizational climate that broadens the original focus of Sheedy et al. (2017) in risk management to also include such a relevant aspect as misconduct issues so as to better understand the organizational climate among bank employees and how it affects the actions and decisions taken by individuals within the institution. Another novel contribution of the paper is that the measurement scale of the climate that is created is based on indicators put forward by international organizations to guide and facilitate the supervisory review process of banking culture.

Thus, the twofold objective of the current study is to identify the dimensions making up M&R climate and develop valid and reliable instruments to measure them. For this purpose, we first review the relevant bibliography and regulatory documents and then develop the scales following Anderson and Gerbing's (1988) original proposals, which involve studying the dimensionality, reliability, and validity of the reference scales. We thus aim to make an eminently practical contribution via this study: a measurement scale of M&R climate, built following the main guidelines on bank culture assessment issued by international standard-setting bodies that will be of use in the management or supervision of banking culture as well as in academic research.

## **2. Culture and climate**

Early documents and papers on bank culture are characterized by their targeted focus on risk management, repeatedly using the term 'risk culture' which has been widely adopted in the finance industry (by financial regulators, banks and consultant firms). According to the Institute of International Finance (IIF), risk culture can be defined as 'the norms and traditions of behaviour of individuals and of groups within an organization that determine the way in which they identify, understand, discuss, and act on the risks the organization confronts and the risks it takes' (IIF, 2009, p. 36). The IIF report recognizes that no consensus exists as to how to define culture, but notes that the prevailing culture clearly influences the quality of risk management.

Various studies show an association between a sound risk culture and lower risk-taking in banking. Fahlenbrach et al. (2012) report that the extent of underperformance by individual large banks during the 1998 Russian crisis proved to be a remarkably accurate predictor of the degree of those same banks' underperformance during the recent crisis. According to Stulz

(2015), this finding suggests that there are unobservable time-invariant bank characteristics – like banks’ culture– that help explain banks’ level of risk. Ellul and Yerramilli (2013) observe that banks with a conservative risk culture, characterized by the strength and independence of the risk management function, choose to take lower risks and put in place stronger risk management systems. Similarly, Aebi et al. (2012) conclude that strong risk management-related corporate governance mechanisms, such as the presence of a chief risk officer in a bank’s executive board, are associated with a better bank performance during the last financial crisis. Likewise, the IMF Global Financial Stability Report, October 2014 (IMF, 2014), concludes that risk culture is an important determinant of bank risk-taking.

All the recent research on banking culture was preceded by a large number of academic studies on organizational culture and climate that aimed to analyse the influence of the social environment on the behaviour of individuals in organizations. The confusion between the two terms –culture and climate– often leads to them being used interchangeably. However, the origin of both concepts, culture and climate, is to be found in very different research traditions and methods (Schneider et al., 2013).

For Schneider et al. (1996), the term culture refers to beliefs and values firmly implanted in an organization, while climate has to do with employees’ perception of different intangible or observable manifestations or expressions of such beliefs and values. Schein (2000, p. xxiv) explains that ‘to understand what goes on in organizations and why it happens in the way it does, one needs several concepts. Climate and culture, if each is carefully defined, then become two crucial building blocks for organizational description and analysis’. The measurement of climate provides evidence on employees’ perceptions regarding the values and beliefs that make up the deepest level of an organization’s culture: its basic underlying assumptions. These are unconscious and taken-for-granted beliefs, perceptions, thoughts, and feelings. They are not visible, but it is this deeper level of the culture that is determinant.

Studies on organizational climate advanced significantly from the research of different ‘focused climates’ (Schneider et al., 2013), such as ethical climate (Victor and Cullen, 1988), safety climate (Zohar, 2010), and customer service climate (Schneider, 1990). Interestingly, Victor and Cullen (1988) included in their study a savings and loan firm in which the ethical climates of ‘law and code’ and ‘rules’ predominated. In a law and code-driven ethical climate, there is a perception that the organization supports principled decision-making based on external codes such as the law or bank regulations. Employees perceiving a rules-driven ethical climate see their organization as having a strong, pervasive set of local norms and procedures, such as ethical codes of conduct, which guide decision-making.

Victor and Cullen (1988, p. 121) anticipated as a hypothesis that the deregulation of the banking industry ‘would alter the economic governance system and produce more independent and/or instrumental ethical climates’. Individuals acting according to these types of ethical climates believe that they should act on deeply held, personal moral convictions to make ethical decisions (‘independent climate’) or perceive that self-interest and company profit guide behaviour, even to the possible detriment of others (‘instrumental climate’). Their prediction proved correct. Following the last financial crisis, the pendulum has swung towards greater regulation and supervision, not only of solvency, but also of banking culture.

Dietz et al. (2004) study under what conditions the service climate is useful for predicting consumer satisfaction. They observed that the service climate differed across different branches in their survey of 160 branches of a retail bank in the USA, verifying that the more proximal and relevant the target of a service climate (a subunit versus an organization as a whole) to customers, the stronger the relationship between service climate and customer attitudes would be. They also proved the moderating role of the frequency of contact between employees and customers.

More recent documents use concepts or evidence from studies on climate to analyse the cultural dimensions of the recent banking crises and scandals, as well as their consequences. Spicer et al. (2014) highlight how aggressive sales practices in retail banking generate an organizational climate that was to become a key driver of bank failures. Power et al. (2013) argue that the general change in the regulatory and organizational climate in the financial services industry after the crisis shows the desire to make risk and risk management a more prominent feature of organizational decision-making and governance.

Leaver and Reader (2017) show that the dimensions of safety culture and safety climate used to understand organizational accidents also explain failures in risk management within financial trading organizations. Sheedy et al. (2017) likewise appreciate these affinities between both fields of research, safety and risk management, but argue the need to introduce a new concept of organizational climate so as to include a specific risk focus. These authors pioneered the study of the risk climate in financial institutions, which they define as 'the shared perceptions among employees of the relative priority given to risk management, including perceptions of the risk-related practices and behaviours that are expected, valued and supported' (Sheedy et al., 2017, p. 101).

In our case, we adopt a broader view, addressing not only excessive risk-taking behaviours, but also misconduct risk issues, including compliance and the focus on the customer's interests. This approach will offer a more comprehensive and fuller diagnosis of the potential cultural failings of the bank, such as a weak risk culture which cannot inhibit excessive risk-taking or poor standards of behaviour that tolerate and even promote misconduct. This broader view is also aligned with the main concerns and requirements regarding the regulation and supervision of banks. As the FSB (2018, p. 1) states, 'costs may be imposed on firms and their customers not only by inappropriate risk-taking but also by misconduct that can result in harm to institutions and customers, and impair trust in the financial system more generally'. Our objective is thus to measure M&R climate via employees' perception of the organization's behaviour with respect to risk-taking and misconduct risk.

### **3. Measuring M&R climate**

According to Weigmann (2002, p.10), safety climate can be defined as 'the temporal state measure of safety culture'. In line with this definition, we can consider M&R climate as a temporal phenomenon, a 'snapshot' of bank culture. Therefore, in order to measure M&R climate, we need to identify key indicators of bank culture to then build and validate a scale that enables measuring the perceptions of employees on these key cultural features.

Although establishing culture indicators and measuring the bank's M&R climate through them is seemingly difficult, there exist a number of documents and guidelines that aim to orient diagnosis of the strength of the organizational culture of banks, such as the framework proposed by the Financial Stability Board (FSB, 2014), whose guidelines have been incorporated into the corporate governance guidelines for banks (BCBS, 2015).

The FSB Guide does not define a 'target' culture. It aims to assist supervisors in identifying practices, behaviours and attitudes that may influence the institution's risk culture and provides recommendations on how to assess the soundness and efficacy of the risk culture in a financial institution. While misconduct risk is not specifically mentioned in the aforementioned guide, the proposed framework includes broad references to conduct risk control issues, such as compliance, integrity, codes of conduct, whistleblowing procedures, and fair treatment of customers.

The FSB document recognizes the complex and multi-faceted nature of an institution's culture, as well as the importance of striving to understand it and comprehend how it affects safety and soundness. The FSB Guide (2014) sets out four groups of indicators to diagnose the soundness of the risk culture in a financial institution:

- *Tone from the top*
- *Accountability*
- *Effective communication and challenge*
- *Incentives*

#### *Tone from the top*

Banking supervisors expect to see a high ethical tone in financial institutions and that the board of directors leads the corporate governance of risk, 'including approving and overseeing management's implementation of the bank's strategic objectives, governance framework and corporate culture' (BCBS, 2015, p. 8). This BCBS document states that 'a fundamental component of good governance is a corporate culture of reinforcing appropriate norms for responsible and ethical behaviour' (BCBS, 2015, p. 9).

The FSB Guide (2014) includes a set of indicators that enable the assessment of whether the bank board members and senior managers are establishing the appropriate tone in the entity. To do so, they must set the organization's principles, values, and expectations with regards to risk. They should actively communicate these principles, values, and expectations and, more importantly, they should lead by example, be coherent with respect to these issues, and demonstrate their priority for the organization.

#### *Accountability*

According to the FSB Guide (2014), a good risk culture means that all employees: know and understand the principles, values, and expectations of the entity regarding their behaviour; know the most important risks and the appetite for risk in their field of activity; know that they are responsible for their behaviour when this is not in line with the organization's risk objectives or its principles and values; are aware of the impact of their behaviour on risk and are held

accountable for risk management; and, finally, that they act responsibly, communicating upwards in the hierarchy any variation in risks or emerging new risks.

A sound culture requires that all employees feel responsible for risk issues (i.e. risk owners) in their own areas and in the firm as a whole. Another aspect of responsibility is that related not to one's own behaviour, but to the behaviour of fellow workers. Responsible behaviour also implies reporting any irregular behaviour (whistleblowing). In turn, the organization should put in place procedures to facilitate whistleblowing and rapid response.

#### *Effective communication and challenge*

Here the focus is on assessing whether: there is open and collaborative communication between board members and senior managers, and, in short, at all levels of the organization; there is internal debate, the confronting of opinions and acceptance of criticism and disagreement are fostered; the organization encourages new proposals and alternate views that question routines and procedures that do not work; and there is openness to change and innovation.

Both groups of indicators, accountability and effective communication and challenge, measure the extent to which employees perceive they are able to contribute to decisions and organizational process. Participation and empowerment are typical dimensions in studies on safety culture (Jeffcott et al., 2006) and safety climate (Dedobbeleer and Beland, 1991). These studies show that practices that encourage these dimensions raise safety awareness and play a vital role in forming the safety climate in an organization (Vinodkumar and Bahsi, 2010).

#### *Incentives*

Following the global financial crisis of 2007-2008, regulators and bank supervisors have devoted a great deal of effort to revising and realigning compensation policies to incorporate risk criteria and reinforce the development of a more risk-focused culture. They were convinced that risk-taking incentives provided by risk-misaligned compensation policies constituted a contributing factor to the financial crisis that began in 2007.

Non-deferred profits-based compensation paid directly in cash or stocks, multi-year guaranteed bonuses, personal hedging, individual compensation and a bonus pool that do not properly incorporate risk and cost of capital adjustment factors, payouts that are linear with current results, excessive severance pay, golden parachutes or payments that reimburse unvested compensation foregone at the employee's predecessor firm (golden handshake) are some examples of these types of incentives that may increase risk taking (IIF, 2009).

Cases of malpractice in the sale of financial products have increased driven by remuneration policies and aggressive commercial practices (Spicer et al., 2014). Considering this, the EU's MiFID II regulations introduce guidelines regarding the remuneration of sales staff and advisors aimed at avoiding incentives for the inappropriate selling of products. It requires financial institutions to not remunerate or assess the performance of personnel in a way that conflicts with their duty to act in the best interest of their client, or that offers an incentive to recommend or sell a particular financial product when another product is more in line with the client's needs.

Incentives provide extrinsic motivation for employees' behaviour. The behaviour of employees is also conditioned by corporate policies and practices related to controlling misconduct and managing risk, including risk governance and risk management structures. However, as Lo (2016, p. 35) points out 'risk priorities mirror a corporate culture's values, since no corporation has the resources to manage risk perfectly'. Similarly, incentives should be set right, but incentives also have limits. To paraphrase Thakor (2016, p. 2), 'cultural difference means that the same incentive-based compensation scheme can produce different behavioural outcomes in two banks'. Finally, Stulz (2016, p. 55) also argues that 'because of the limits of risk management and incentives, the ability of a firm to manage risk properly depends on its corporate culture as well'.

Culture, climate, incentives and management systems are related, yet distinct constructs, as has been shown in other research fields such as occupational safety. They should not be confused with climate assessment purposes. Thus, leaving aside incentives and risk management systems, to measure M&R climate we will concentrate on measuring employees' perceptions regarding those organizational practices related to: 1) setting the tone from the top, 2) providing employees with more risk ownership and accountability, and 3) promoting effective communication and challenge. Our core hypothesis states that M&R climate is multidimensional in nature, breaking down into different dimensions or latent constructs related to these indicators.

#### **4. Methodology**

In order to achieve the proposed objective, i.e. to develop and validate a scale to measure M&R climate, we carried out an empirical study among employees in the banking industry. We first developed measurement scales operationalizing the various dimensions of the concept of M&R climate and then designed a questionnaire to collect information. Structural equation modelling was used to assess the latent construct and dimensional structure underlying the observed item responses on the questionnaires.

To develop the measurement scales, we followed the multiple indicator approach, so each dimension is measured using various items that provide information on that dimension and which, in combination, are considered representative of it. To generate these items, we reviewed the literature on risk climate, misconduct, and banking culture. We also considered a large number of studies and reports from different bodies and consultants that include practices and actions related to risk culture and controlling misconduct. Furthermore, we reviewed case studies such as the Salz Review on Barclays (Salz, 2013) and JP Morgan's report (JPMorgan Chase & Co, 2014). However, our most important sources were the IIF report *Reform in the Financial Services Industry* (IIF, 2009) and, in particular, the indicators from the FSB *Guidance on Supervisory Interaction with Financial Institutions on Risk Culture —A Framework for Assessing Risk Culture* (FSB, 2014). Both documents have thus been taken as the main basis to generate risk climate items and we have supplemented them with other sources (BCBS, 2015; Group of Thirty, 2015) in order to better cover misconduct risk issues.

An initial list of items was obtained that was subsequently subjected to a refining process in order to eliminate those items which were redundant due to having a similar meaning and to draw up a first draft of the questionnaire that would subsequently be used in the survey. We



then revised the questionnaire in a process involving in-depth interviews with academics and experts (in risk management, retail banking, and private banking).

The different survey items were worded in neutral terms to avoid bias or errors using Likert 1-5 scales. Finally, the questionnaire was sent to 426 bank professionals, receiving 110 correctly-completed questionnaires (a response rate of 25.82%). The use of questionnaires aimed at employees as a source of information is a commonplace and generally accepted method in studies on organizational climate and culture (Ashkanasy et al., 2000). The main characteristics of the sample are presented in Table 1. We asked the participants to evaluate on a 5-point Likert scale their attitudes towards risk ranging from 1 (risk adverse) to 5 (risk lover) and a middle position 3 (risk neutral). As can be seen, 67.27% of the respondents state that they are risk neutral or risk adverse.

No statistically significant differences were observed between the responses of the early respondents (there were 18 initial responses to the survey) and 21 late respondents in the last reminder of the survey. This result suggests a low non-response bias, which has a limited effect on the validity of the study.

*(Table 1 inserted here)*

## **5. Results**

Of the different modelling strategies of structural equations proposed by Jöreskog and Sörbom (1993), we adopted that of confirmatory modelling. This consists in using Confirmatory Factor Analysis (CFA) to evaluate the statistical significance of an isolated measurement model closely linked to a theory: in this case, the indicators of banking culture identified in the documents issued by international standard-setting bodies and the literature review.

The initial model for measuring M&R climate includes 21 items in all, classified in 5 dimensions denominated: *Tone* (4 items), *Coherence* (4 items), *Accountability* (4 items), *Tolerance* (4 items), and *Communication* (5 items). The first two dimensions are representative of the tone from the top, including the values being espoused (*Tone*), leading by example and the tone and behaviour in 'middle' management (*Coherence*). The second two dimensions refer to awareness of one's obligations and responsibilities (*Accountability*), escalation process and clear consequences of excessive risk-taking and misconduct (*Tolerance*). The last dimension (*Communication*) refers to the openness to alternate views and to the promotion of an environment of open and constructive engagement which favours employee participation.

The reliability of the *Tone*, *Coherence*, and *Communication* constructs was found to improve (improving Cronbach's Alpha to > 0.8) if 3 items were eliminated, one of each of the three constructs. When carrying out CFA on alternative specifications of the measurement model including these 3 items, it was also verified that they do not converge sufficiently on their latent variable (i.e. standardized lambda parameters lower than 0.5), such that their deletion contributed to improving the goodness of fit of the model (Anderson and Gerbing, 1988). Table 2 shows the 5 dimensions and the 18 items which reflect them in the final model after eliminating these 3 items.

*(Table 2 inserted here)*

To test whether the proposed measurement model adequately fits the data, it is necessary to previously verify the psychometric properties of the measurement scale of the different constructs under consideration. Specifically, we analysed the dimensionality, reliability, and validity of the scales following the methods proposed by Anderson and Gerbing (1988). We thus ran a Confirmatory Factor Analysis (CFA) using the statistic package EQS version 6.2 for Windows. Table 3 reports the means, standard deviations, and Cronbach  $\alpha$  coefficients of all the dimensions.

*(Table 3 inserted here)*

#### *Dimensionality analysis*

We first estimated a first-order confirmatory factor model to analyse the composition of the dimensions reflecting M&R climate. Table 4 shows our results from the estimation of the model following the procedure set out in Bentler (1995) and Hair et al. (1998). The parameters were estimated using the maximum likelihood method.

*(Table 4 inserted here)*

The value of the chi-square statistic is 149.4895, with 125 degrees of freedom. The result of this test ( $p > 0.05$ ) indicates that the model is consistent with the observed data (Bentler, 1995; Hair et al., 1998). Other absolute measures of goodness of fit confirm that the model fits the sample data well. This is the case of the Root Mean Square Error of Approximation (RMSEA), where values lower than 0.05 are indicative of a good model fit, and of the Goodness-of-Fit Index (GFI), indicative of an acceptable fit when it takes values above 0.8, a threshold recommended by Jöreskog and Sörbom (1993) and Mueller (1996). The Comparative Fit Index (CFI) value also indicates that the model is a good fit for the tested data. The Incremental Fit Index (IFI) coefficient values range from zero to 1.0, with values close to 0.95 indicating superior fit (Hu and Bentler, 1999).

#### *Reliability analysis*

In order to guarantee the maximum reliability of the proposed scales, Cronbach's Alpha Coefficient, the Composite Reliability Index (CRI), and the Average Variance Extracted (AVE) were calculated for each of the dimensions of M&R climate.

As Table 3 shows, the five dimensions used to measure M&R climate have Cronbach alpha coefficients higher than 0.8, which is considered an adequate level of reliability (Nunnally and Bernstein, 1994). The CRI is in all cases greater than the minimum level of 0.6 recommended by Bagozzi and Yi (1998). Likewise, the AVE is always higher than the recommended threshold of 0.5 (Hair et al., 1998).

#### *Validity analysis*

The validity of the scales was verified by considering their content, convergent, and discriminant validity. Content validity refers to the degree to which a scale includes the theoretical

dimensions of the concept to be measured. It is based on the review of the existing literature, which allowed us to generate the items making up the measurement scales. The questionnaire was also subjected to a review process via in-depth interviews with experts and academics.

The convergent validity of a concept evaluates the degree to which two measures of the concept are correlated (Hair et al., 1998). To perform this evaluation, it is necessary to determine the extent to which items designed to measure the same concept are correlated with one other. This can be analysed by means of the standardized factor regression coefficients (lambda parameters) between the set of explanatory variables of the scale and the corresponding latent variable (Anderson and Gerbing, 1988). A strong condition of convergent validity is that these parameters should be significant at the 95% confidence level, for which Student-*t* values greater than 1.96 are required, and that the value of the parameter should be greater than 0.5. The values of the parameters and the *t* values are shown in Table 4. It can be seen that they all meet both conditions, thus confirming the convergent validity of the proposed scales.

Discriminant validity indicates the degree to which two conceptually similar factors differ. There is discriminant validity if the correlations between the items or instruments designed to measure them are low. This was verified using the confidence interval test proposed by Anderson and Gerbing (1988). This test involves estimating a confidence interval of  $\pm 2$  standard deviations for the 10 existing coefficients of correlation between the 5 dimensions of M&R climate and determining whether this interval includes 1.0. If it does not include 1.0, the dimensions' discriminant validity will be confirmed. This test is equivalent to testing the null hypothesis that the coefficient of correlation between two dimensions is equal to 1.0, and hence that the dimensions cannot be said to be significantly distinct. The Fornell and Larcker (1981) criterion was also applied to test discriminant validity, likewise verifying the discriminant validity of the measurement scales of the five dimensions or latent factors.

#### *Second-order CFA*

After confirming the psychometric properties of the measurement scales of the five latent factors, we ran a second-order CFA to determine whether these dimensions are reflecting a single factor, or latent variable, which measures the organizational climate related to misconduct behaviours and risk culture issues. Figure 1 shows the adjusted model. This is a reflective measurement model, in which M&R climate is modelled as a second-order factor (F2<sup>nd</sup>M&R Climate) whose indicators are the five first-order factors of *Tone*, *Coherence*, *Accountability*, *Tolerance*, and *Communication*. The results of the model fit are satisfactory and confirm that these five indicators adequately reflect the latent variable (i.e. M&R climate).

*(Figure 1 inserted here)*

Figure 1 shows the standardized Lambda parameters, all of which are significant and range between 0.696 and 0.879. These parameters play a similar role to regression coefficients, so standardizing them facilitates their interpretation as a correlation; in this case, between each dimension and the latent variable. It can be seen that the *Coherence* dimension has the highest correlation with the latent variable, followed by the factor measuring *Tolerance*.

According to these results, M&R climate is shown to be a multidimensional construct that is reflected in employees' perceptions about:

- The priority accorded by the organization's organs of government and management to compliance with norms, attention to the interests of the customers, and prudence in the assumption of risks (*Tone*).
- Coherence in the organization's behaviour regarding said priority (*Coherence*).
- The direct responsibility of employees as regards controlling misconduct and managing the risk (*Accountability*).
- The organization's response to inadequate or irregular conduct by an employee involving possible non-compliance with laws, regulations, internal norms, ethical codes, risk limits, or inadequate commercial practice or consultation (*Tolerance*).
- The importance that the organization affords to effective communication and the challenging behaviours of its members (*Communication*).

## 6. Conclusions

Concern for cultural aspects in banking is quite recent. Banking regulators and supervisors have focused on organizational culture as a determining factor in misconduct and excessive risk-taking in the sector. This is particularly relevant in the case of global systemically important banks (G-SIBs), where these risks entail potentially destabilizing effects.

In general terms, the available evidence indicates that there are differences in the degree to which national regulations have prompted the adoption of the new principles of corporate governance of risk issued by the BCBS (BCBS, 2010). The principles related to the implementation of the characteristic artefacts of the organizational structure of governance and risk control (audit and internal controls, senior management responsibility, risk management function), compliance with which is easily verified, have been more comprehensively adopted. However, few countries require the establishment of a code of conduct that discourages excessive risk taking, although many highlight the role of senior leaders in building a robust corporate culture (Wright et al., 2018). It is not easy to objectively verify compliance with recommendations of this type (e.g. 'promote a risk culture where risk management is seen as a priority for the organization'). It is hence useful to develop instruments that measure the banking culture based on employees' perceptions, as the organizational climate generated by these perceptions conditions their behaviour.

Culture and climate represent different perspectives on the same phenomenon, with climate being a manifestation of culture. The climate perspective on organizational behaviour offers a more empirical approximation to identify and measure those cultural, organizational, and situational characteristics influencing the behaviour of the organization's members. In the current study, we have built and validated a measurement scale of M&R climate made up of 18 items grouped in five dimensions. We designed the scale taking previous research and the indicators from the Financial Stability Board (FSB, 2014) as references. It is therefore a measurement scale aligned with the recommendations issued by the main standard-setting bodies that guide banking regulation and supervision policies. Moreover, this study provides an

instrument which measures not only risk-taking behaviours, but also misconduct issues, including focus on customer interest and compliance.

The measurement scale validated in this paper allows us to give a picture of the profile of a positive M&R climate. Such a climate is characterized by the following aspects: senior management and the board members set an active communication policy that sets the tone and priority the organization affords to limiting misconduct and to prudent risk management; organizational behaviour is coherent with its principles and values; employees assume direct accountability for compliance and customer service; there is rapid whistleblowing and organizational response to any event that involves misconduct risk; and finally, there exists an openness to dialogue and disagreement, as well as a readiness to share information, knowledge, and practices. These dynamics of organizational behaviour should lead to more prudent risk management and also to limiting misconduct.

Regarding to our contribution to this field, our research found that M&R climate is mainly – though not exclusively– related to organizational coherence (between the principles and values declared by the bank, decision-making, and actual organizational behaviour) and a zero-tolerance policy to misconduct, thereby conveying the significance that bank regulators ascribe to these issues. *Coherence* is the dimension with the greatest weight in the shaping of M&R climate, followed by the *Tolerance* dimension. This fits well with the findings reported by Guiso et al. (2015), who find that proclaimed values appear irrelevant. Yet, when employees perceive top managers as trustworthy and ethical, a firm's performance is stronger.

The *Tolerance* construct considers both the available organizational mechanisms to report any type of misconduct risk or excessive risk-taking, as well as the organization's response in such situations. It is very similar to the only dimension of the risk climate measurement scale developed by Sheedy et al. (2017) that is systematically associated with behaviours such as misconduct towards customers (Sheedy et al., 2019).

The measurement scale proposed here should prove useful to organizations requiring a diagnostic and management tool that is reliable, valid, and in line with the recommended guidelines for the supervision of banking culture. It will facilitate a proactive evaluation of the bank's current situation, the identification of dysfunctional aspects and cultural failings, and the monitoring of the evolution of bank culture over time. A weak culture may be at the root of risk management failures and misconduct, which can be anticipated and prevented with the early warning signals offered by these types of instruments.

Nevertheless, a number of aspects limit the generalisability of the results obtained here. Although we have defined the constructs used in this paper as precisely as possible, our measurement scales should be understood as an approximation to latent phenomena that are inherently not fully measureable. Moreover, this research was carried out at a particular moment in time, with the characteristic limitations of a cross-sectional study. On the other hand, the adopted modelling strategy presents the limitation that the assessed model is just one of the possible models to adopt, without prejudice to the existence of others with a similar or better fit, which have not been considered here. It is important to verify the invariance of the M&R climate measuring instrument, evaluating its psychometric properties on independent samples from different organizations or organizational levels.

As future lines of research on banking culture, the proposed scale will be useful for analysing relations with other constructs, such as incentives, risk metrics, misconduct costs, and banks' performance ratios. Another aspect to be further researched is the right style of leadership among board members and senior executives to promote a strong culture. The importance showed by the coherence construct largely seems to prescribe a leadership style corresponding to what is known as 'authentic leadership' (Avolio et al., 2004).

## Notes

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## Data Availability Statement

The data are not publicly available due to privacy restrictions.

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**Table 1. Main characteristics of the sample**

	%
<hr/>	
Professional experience in control functions (risk management, compliance, internal auditing)	
Yes	40.90%
No	59.10%
<hr/>	
Education	
Economics/Business	77.28%
Rest	22.72%
<hr/>	
Length of service in organization	
≤5 years	23.63%
6-10 years	23.63%
11-25 years	40.90%
>25 years	11.84%
<hr/>	
Attitude towards risk	
Neutral or risk averse	67.27%
Risk loving	32.73%
<hr/>	

**Table 2. Measurement scale of study variables. Constructs and items**

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**F1: Tone**  
*Importance that the board of directors and senior management accord in their internal communications to the following aspects:*

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Tone1. Compliance with laws, sector regulations, and internal norms and procedures  
Tone2. Putting customer at the centre of the firm's business strategy  
Tone3. Being prudent and assuming risks within defined limits in each area or operation

---

**F2: Coherence**  
*In my organization...*

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Coherence1. The decisions and conduct of middle and lower management are coherent with the organization's principles and values  
Coherence2. There is coherence between the messages transmitted by the board and senior managers and what my colleagues say should be done  
Coherence3. The behaviour of the organization as a whole is coherent with its principles and values

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**F3: Accountability**  
*In my organization, the employees are held accountable for ...*

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Account1. Complying with laws, sector regulations, ethical codes, and internal norms and procedures  
Account2. Safeguarding customer interests, offering them a quality service, suitable products and fair commercial treatment  
Account3. Integrating risk evaluation and control criteria into decision-making  
Account4. Rapidly communicating upwards to superiors any increase or variation in risks

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**F4: Tolerance**  
*If in your organization there is inappropriate or irregular behaviour on the part of an employee involving a possible breach of laws, regulations, internal norms, ethical codes, procedures, or risk limits, or an inappropriate commercial practice or advising:*

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Tolerance1. The organization expects that conduct to be rapidly reported, regardless of any positive impact it may have on the firm's performance  
Tolerance2. There are confidential whistle-blowing channels in place, which facilitate rapid communication upwards to upper management levels  
Tolerance3. There is an immediate management response when such conduct is made known  
Tolerance4. There are severe consequences for the offender, regardless of any positive or negative impact on the firm's performance

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**F5: Communication**  
*Members at all levels in the organization are encouraged to:*

---

Communic1. Disagree and express alternative opinions and proposals, while maintaining a critical and constructive attitude among the employees  
Communic2. Communicate any disagreement they may have with decisions or commercial actions, even if they are not bad practice and do not create excess risk for the customer or firm  
Communic3. Propose and debate ethical dilemmas concerning professional practice or certain practices, activities, or operations  
Communic4. Share information, knowledge, and practices

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**Table 3. Means, standard deviations, and reliabilities**

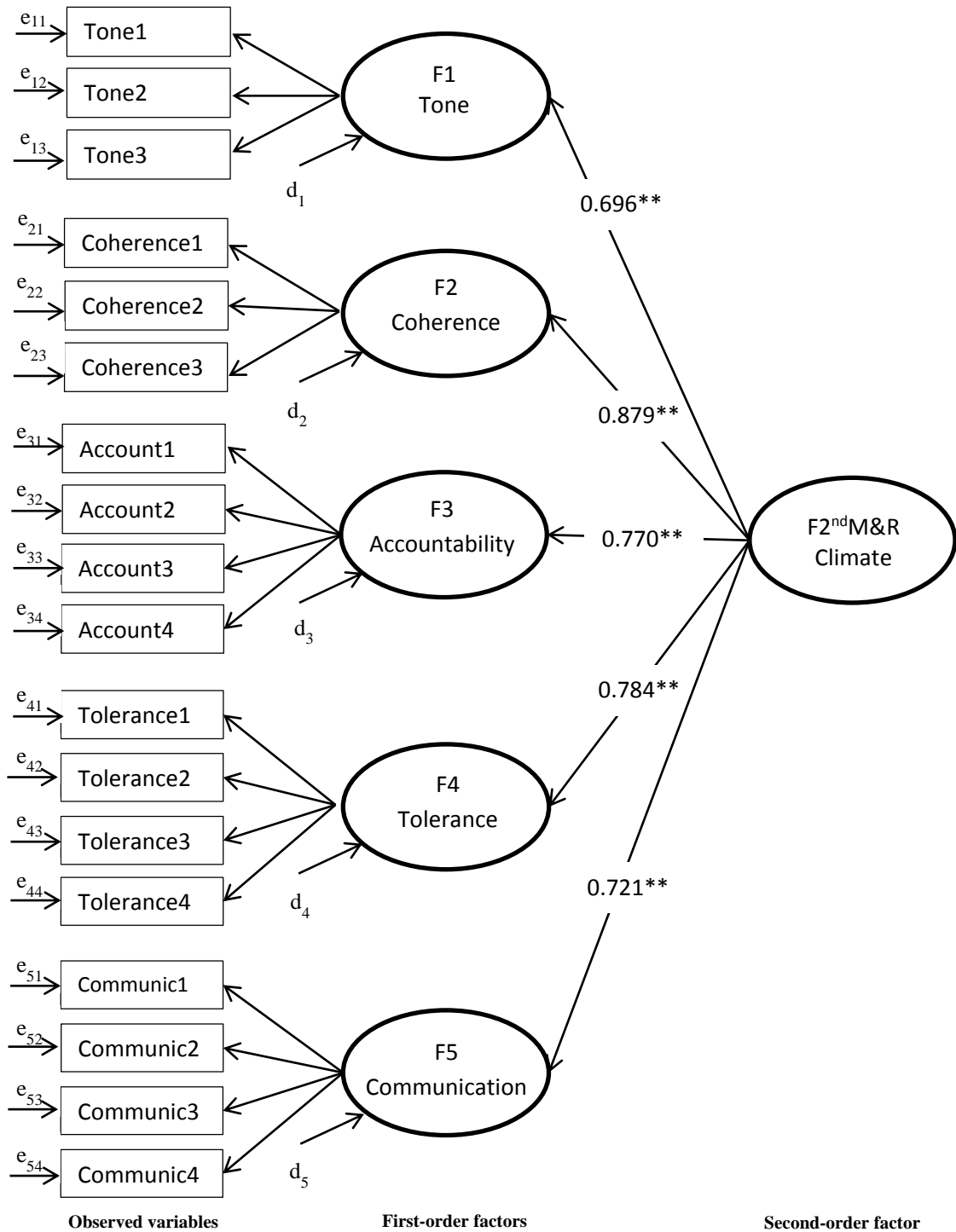
	<b>Mean</b>	<b>S.D.</b>	<b>Cronbach <math>\alpha</math></b>
<b><i>F1: Tone</i></b>	4.509	0.697	0.859
<b><i>F2: Coherence</i></b>	3.760	0.907	0.888
<b><i>F3: Accountability</i></b>	4.165	0.728	0.816
<b><i>F4: Tolerance</i></b>	4.138	0.842	0.864
<b><i>F5: Communication</i></b>	3.165	0.960	0.891

**Table 4. First-order CFA for M&R climate**

Dimension variables	CRI AVE	Standardised lambda parameters	t-Values	Dimension - Dimension	Correlation (standard error)	Confidence interval
<i>F1:</i> <i>Tone</i>	0.863 0.678			F1-F2	0.613 (0.085)	[0.443]-[0.783]
Tone1		0.832	5.051	F1-F3	0.588 (0.125)	[0.338]-[0.838]
Tone2		0.763	5.217	F1-F4	0.524 (0.110)	[0.304]-[0.744]
Tone3		0.872	7.188	F1-F5	0.424 (0.084)	[0.256]-[0.592]
<i>F2:</i> <i>Coherence</i>	0.890 0.729			F2-F3	0.650 (0.097)	[0.456]-[0.844]
Coherence1		0.868	11.327	F2-F4	0.679 (0.076)	[0.527]-[0.831]
Coherence2		0.791	8.277	F2-F5	0.704 (0.057)	[0.590]-[0.818]
Coherence3		0.899	10.440	F3-F4	0.660 (0.098)	[0.464]-[0.856]
<i>F3:</i> <i>Accountability</i>	0.819 0.540			F3-F5	0.504 (0.099)	[0.306]-[0.702]
Account1		0.616	3.834	F4-F5	0.553 (0.085)	[0.383]-[0.723]
Account2		0.564	4.742			
Account3		0.858	8.683			
Account4		0.852	8.643			
<i>F4:</i> <i>Tolerance</i>	0.867 0.622					
Tolerance1		0.813	9.324			
Tolerance2		0.634	7.353			
Tolerance3		0.873	9.526			
Tolerance4		0.815	8.753			
<i>F5:</i> <i>Communication</i>	0.897 0.690					
Communic1		0.848	13.244			
Communic2		0.895	13.888			
Communic3		0.908	13.958			
Communic4		0.643	7.421			
<b>Results of the Model Fit</b>		S-B $\chi^2$ (125) = 149.4895 p = 0.06688		GFI = 0.856 CFI = 0.957		IFI = 0.959 RMSEA = 0.042

\* Note: t-values above 1.96 indicate significance at the 95% confidence level

Figure 1. M&R climate (second-order confirmatory factor model)



Observed variables	First-order factors	Second-order factor
<b>Results of the Model Fit:</b>		
S-B $\chi^2$ (131) = 155.2397	GFI = 0.850	IFI = 0.959
p = 0.07289	CFI = 0.958	RMSEA = 0.041

Note: \*\* indicates significance at the 95% confidence level.