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Linking Organisational Commitment with Continuous Learning through Peripheral vision and Procedural Memory

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# Abstract

Under some circumstances such as the lack of commitment of peers or the imposition of excessive authority, many employees tend to turn a blind eye to either the development of new, more effective procedures or recognise that new or modified customer needs have developed. In these situations, organisational commitment is a preliminary step not only to the effective implementation of current procedures but also to questioning values of the organisation and future needs of customers. This study proposes that organisational commitment helps alleviate these problems by maintaining an ambidextrous perspective between procedural memory and peripheral vision to promote continuous learning. This research has therefore been conducted to explain both conceptually and empirically how peripheral vision could interact with and influence procedural memory, and hence facilitate continuous learning (CL) within the business. While peripheral vision is often associated with developing and supporting knowledge structures for the exploration of new opportunities and with identifying and addressing new clients, many consider these knowledge structures as examples of organisational routines and procedures, and thus as aspects of the 'procedural memory' of an organisation. To contribute to the understanding of these relationships, this study addresses two questions: (1) Are outcomes of CL processes within the organisation determined by the presence of organisational procedural memory – both skills and knowledge, and (2) Does an improved peripheral vision result in higher levels of learning? After using PLS-SEM on a sample of 203 employees of Spanish banks, our findings support the theory that peripheral vision facilitates the emergence of new and unconventional behaviours within a culture, which in turn has a positive effect on the firm's continuous learning.

# Keywords

Organisational Commitment, Peripheral Vision, Procedural Memory and Continuous Learning

# 1. Introduction

Under some circumstances such as the lack of commitment of peers or the imposition of excessive authority, many employees tend to turn a blind eye to either the development of new, more effective procedures or recognise that new or modified customer needs have developed. In these situations, organisational commitment is a preliminary step not only to the effective implementation of current procedures, but also to the process of rethinking organisational values and the evolving needs of customers (Vanhala et al., 2016; Yahaya & Ebrahim, 2016). This study argues that organisational commitment indirectly helps employees to learn continuously through the application of procedural memory and the improvement of their peripheral vision (Sessa & London, 2006; Song et al., 2009).

Continuous learning (CL) requires corporate resources that encourage employees to follow organisational rules, routines and procedures (Cohen & Bacdayan, 1994). CL starts at the outset when a new firm is created, as its members need to learn new skills, roles, and routines, as well as about the environment in which the organisation is supposed to do business (DeVaughn & Leary, 2016). Once the company has been operating in a particular industry for an extended period of time, it is likely to have accumulated a wide variety of standard rules and procedures for dealing with customers, suppliers, partners and employees. These practices and structures may be considered to constitute the 'procedural memory' of an organisation (Moorman & Miner, 1998), and form the basis for its CL strategy.

Inevitable, given changes in technology, knowledge, employees, and the internal and external environment over time elements of an organisation's procedural memory can become obsolete or represent inefficient or ineffective procedures and standards (Gruszka & Nęcka, 2017; Hislop et al., 2013). Procedures and standards may be inappropriate because of their being based on inappropriate theories in action (Blackler & Regan, 2009) or as a result of changes in the internal or external environments of the organisation and the violation of basic assumptions that are necessary for the application of existing theories in action. The impact of using such inappropriate theories in practice have been discussed by several authors (e.g. Blackler & Regan, 2009; Larwood & Whitaker, 1997; Tsang & Zahra, 2008)) who have concluded that inaccurate or obsolete elements in procedural memory can give rise to serious suboptimality through the application of inappropriate procedures or standards (Cohen & Bacdayan, 1994). How then can an organisation become fully aware of the fact that some of its skills or knowledge, that is, elements of its procedural memory, are inaccurate or inappropriate?

To explore potential answers to the question above it is instructive to review and understand theories of vision, which can be considered to underpin the domain. False pathologies of managerial approaches, as described by Mackay and Burt (2015), may be considered to be modelled by the situation with respect to vision when the eyes' focusing mechanism is overworked and loses its capacity to refocus rapidly, resulting in a momentarily unclear vision. From the perspective of an individual firm, this can represent the situation where managers who have been too focused on core measures or short-term objectives and have somehow lost sight of strategic goals. Other authors consider that when the workers' knowledge is shared with a 'closed mind', it can lead to shared incorrect knowledge (Santos et al., 2016). In fact, it can be argued that often managers remain focused on their current customer base (Corsaro, 2019; Day & Schoemaker, 2006), thus missing on benefits like reaching out to the broader pool of potential customers could bring to the business (Mackay & Burt, 2015). To correct this induced myopia, managers may need to identify new or untapped potential customers' needs (Currie, 2004; Day & Schoemaker, 2006; Hislop et al., 2013; Smolarczyk & Hauer, 2014). Peripheral vision refers to paying attention to what is visible to the company outside the central area of focus (Day & Schoemaker, 2006). It is usually used to detect information that may be important for the 'safe and an effective navigation of the world' (Day & Schoemaker, 2004). For example, peripheral vision may help a driver stay focused on the vehicle's dashboard while being able to perceive what is taking place at either side of the road, without necessarily turning their head. In the context of the firm, peripheral vision may well result in the identification of outdated skills and action patterns, leading to a potential modification of (previously unconscious) choices that people make (Haeckel, 2004). Furthermore, conscious attention to its peripheral vision may allow for the identification of changing trends in customer needs and expectations, and also in the identification of new customers and value-adding opportunities, as well as growth prospects (Cunha & Chia, 2007; Day & Schoemaker, 2004; Ebbers & Wijnberg, 2009). Thus, peripheral vision may lead to revisions of procedural memory, and thus procedures and knowledge structures in a continuous fashion.

From an organisational perspective, different situations and contexts require different sets of skills and abilities, procedures and standards (Blackman et al., 2013; Faraj et al., 2018; Wijnhoven, 2001). For instance, two similar transport and mobility services within the same city may have totally different requirements: while a bus driver often requires the knowledge of a route and not customers, a taxi driver can only provide the service by getting the required destination from an interaction with his/her customers. That shows that when an expert is moved from one context to another, there is a need for their procedural memory to be updated to reflect the need for new or revised procedures, routines and knowledge structures (Cegarra-Navarro, Wensley, Jimenez-Jimenez, & Sotos-Villarejo, 2017). The same principle, it can be argued, applies to organisations facing the current challenging and dynamic business environment. By expanding the field of vision to include peripheral vision allows both individuals and organisations to be empowered in their efforts to counteract flawed and outdated procedures and standards. Peripheral vision facilitates the reorientation of organisational values, norms and behaviour (Day & Schoemaker, 2004), and the recognition of new trends and developments in both the internal and external contexts (Haeckel, 2004).

This study proposes that organisational commitment helps maintain an ambidextrous perspective between peripheral vision and procedural memory. In doing so, this study addresses the following two questions: 1) Are outcomes of CL processes within the organisation determined by the presence of organisational procedural memory – both skills and knowledge, and 2), Does an improved peripheral vision result in higher levels of learning? These research questions are studied through the following conceptual framework.

#### 2. Conceptual framework

In the context of this research, a knowledge worker is a person who, for a living, performs activities related to the development and management of knowledge (Hislop, 2008; Pyöriä, 2005). For example, knowledge workers are those individuals who contribute to the transformation and exchange of information and who make active use of the knowledge derived from such information (Reinhardt et al., 2011; Wipawayangkool & Teng, 2019). From the perspective of the banking sector, knowledge workers include those employees whose job is to deal with financial, accounting and expenditure

documentation issues. In this paper, the term knowledge worker is used to refer to bank employees who are involved in any tasks related to personal banking, corporate banking, investment banking, private banking, transaction banking, or insurance or consumer finance.

The conscious review and updating of the procedural memory of the organisation may be considered as an example of CL. Furthermore, CL enables knowledge workers to develop and enhance their own skills, and thus the knowledge base of the organisation. CL may be considered a part of organisational learning, particularly in service firms (Martinez, Zouaghi, Marco, & Robinson, 2019), where the knowledge worker has a strong and positive association with organisational performance. Yeo & Marquardt, (2010) argued that learning is context-dependent and based on the collective participation of individuals through structured and spontaneous processes. This helps ensure that their actions continuously lead to improved efficiency (Marsick, 2013) and potentially to an enhanced competitive advantage for the firm (Barney, 1986). The extant literature goes one step further to suggest that the presence of organisational learning processes become a framework for the necessary discussion of different views between managers and employees and provides for the balancing of the interests between stakeholder groups and with the economic welfare of the organisation (Marsick, 2013; Watkins & Marsick, 1997).

Considering the above, concepts of organisational learning and CL are inextricably related (Hernes & Irgens, 2012). Certainly, processes that define an organisational learning strategy are designed and embedded into everyday practices in such a way that employees can continually learn from and teach each other on the job (Sessa & London, 2006). CL strategies can then lead employees to meet organisational goals, supporting the firm's efforts to increase productivity and remain competitive and innovative (Itani et al., 2017; Kluge & Schilling, 2003; Tannenbaum, 1997).

Unlike formal training mechanisms, CL strategies require that employees be aware of their knowledge needs and spontaneously engage in relevant learning activities (Sessa & London, 2006). Furthermore, a CL attitude results in employees' refocus on everyday training and learning rather than formal training (Rasow & Zager, 1988). Therefore, CL approaches include, but are not restricted to, actions aiming to inspire and keep employees motivated to use extant routines to support the generation of new concepts (Niessen, 2006) and also seek to develop, where appropriate, new routines.

Prior research suggests that organisational commitment is a critical issue in supporting shifts in ways of working and learning (Selamat et al., 2013). Partially in line with these views, early work by Cegarra-Navarro, Wensley, Garcia-Perez, and Sotos-Villarejo (2016) proposed a framework to bring procedural memory closer to organisational learning though peripheral vision. The framework placed its emphasis on how procedural memory can become the source of knowledge required to exploit existing opportunities such as related to current customers, products and services. The following sub-section contributes to better understand how CL can be fostered by organisational commitment through procedural memory and peripheral vision, as previously stated by authors such as Cegarra-Navarro et al., (2017) and Moorman & Miner, (1998).

# 2.1 Linking organisational commitment with procedural memory and peripheral vision

Procedural memory is composed of a set of action rules that provide for the performance of familiar tasks and routines (Anderson, 1983). Procedural memory is considered to be

a part of the long-term memory that is responsible for knowing how to do things (Moorman & Miner, 1998). In this work, the concept 'procedural memory' is used to refer to the part of individual's and/or organisational memory, which provides knowledge workers with access to organisational procedures and routines.

Over time, researchers have adopted different methods to represent the concept of procedural memory (Anderson, 1983), often referring to its negative effects. For example, some have argued that procedural memory may hinder creativity and its effects on innovation as it encourages firms to continuously use fine-tuned routines and processes, which are difficult to modify (Day, 1994). This is because routines and standard methods can speed up actions and enhance efficiency by reducing the cost of search and acquisition of new procedures, often focusing on employees' attention and limiting effects of politics within the organisation (Walsh & Ungson, 1991).

Organisational commitment has been defined as the degree of identification and belonging an individual has with the company (Allen & Meyer, 1990). The concept is not only concerned with collective attitude, but also encompasses the way of understanding the organisational culture and living it (Allen & Meyer, 1990). Given the importance of organisational commitment to implement procedures and protocols within the organisation, it is necessary to examine the concept in detail to ensure compliance with applicable procedures on a daily basis (Abdullah & Ramay, 2012; Macedo et al., 2016; Valaei & Rezaei, 2016). This study proposes that organisational commitment helps to maintain an ambidextrous perspective between procedural memory and peripheral vision. This is an important contribution and will complement prior research on peripheral vision and procedural memory (e.g. Cegarra-Navarro, Wensley, Garcia-Perez, & Sotos-Villarejo, 2016; Cegarra-Navarro, Wensley, Jimenez-Jimenez, & Sotos-Villarejo, 2017; Cunha & Chia, 2007; Day & Schoemaker, 2006; Fairclough, 2005) because it supports that peripheral vision is not inherent to the organisation, and therefore it requires a prior commitment.

Signals demonstrating that existing contents of procedural memory in an organism is not fit for purpose may come from several sources. One of such sources is peripheral vision. In the particular case of an organisation, peripheral vision allows for the identification of blind spots/areas in the field of vision caused by existing power relations (Haeckel, 2004). These blind spots and potential areas of overlooked vision may well result in elements of the procedural memory being incomplete or obsolete (Day & Schoemaker, 2004). When in a turbulent environment, it is important for organisations to be able to recognise and gather signals, which indicate that elements of their procedural memory are inaccurate or obsolete. To avoid this problem, it is important that employees do not just look for learning opportunities derived from internal information flows, they also need to identify opportunities that come from the outside (e.g. Cegarra-Navarro, Wensley, Garcia-Perez, & Sotos-Villarejo, 2016; Cegarra-Navarro, Wensley, Jimenez-Jimenez, & Sotos-Villarejo, 2017; Cunha & Chia, 2007; Day & Schoemaker, 2006; Fairclough, 2005).

Fostering organisational commitment means helping employees to develop their autonomy, responsibility and perseverance (Yahaya & Ebrahim, 2016), so that they can make their own decisions, commit to the choice made and take responsibility for consequences of their overcoming obstacles that are encountered and enjoy achieving goals that are proposed (Herscovitch & Meyer, 2002). Organisational commitment also means thinking of customers and assessing consequences of our own actions to deal with current and future customers (Walter & Ritter, 2003). Those workers who are committed to their organisations will not only think about problems of current customers, but will

also think about future needs of potential customers (Vandenberghe et al., 2007). In other words, organisational commitment may aid in anticipating potential customer expectations.

The first two hypotheses that we propose aim to examine how organisational commitment affects procedural memory and peripheral vision. Therefore, we propose:

Hypothesis 1: Organisational Commitment is positively associated with Procedural Memory. Hypothesis 2: Organisational Commitment is positively associated with Peripheral Vision.

#### 2.2 Linking procedural memory with continuous learning through peripheral vision

In the environment within which the Spanish banking industry operates, bank managers increasingly find themselves shifting their focus from satisfying needs of existing customers to seeking, identifying, attracting and engaging new customers. In such a demanding context, however, procedural memory and assumptions on which it is based may hinder the ability of individuals and organisations in the establishment and building of relationships with new customers (Day & Schoemaker, 2004). It is in these circumstances where peripheral vision may support a strategy that meets the needs of existing customers whilst also being directed towards potential customers. Thus, organisations within the Spanish banking sector would seek and benefit from those signals that could counteract outdated traits of their procedural memory leading to its revision – where necessary – for the long term success of their business (Haeckel, 2004).

The extant literature also contains research findings showing that the interaction between procedural memory and peripheral vision leads to a questioning of existing individual and organisational knowledge. This process of examination and subsequent revision and/or consolidation of existing knowledge becomes a means to continuous updating established elements of the procedural memory of the organisation (Cohen & Bacdayan, 1994). In practical terms, it enables knowledge workers to reconsider the relevance of existing individual and organisational knowledge and skill sets, and hence allow for the development of behaviours leading to successful innovation based on updated or modified knowledge (Hernes & Irgens, 2012; Hislop, 2008). This means that effective peripheral vision provides a framework for the necessary exchange of views between bank employees and their potential customers, which in turn may allow for knowledge workers within the banking industry to update established memories and even find new solutions to old problems. Therefore, the following hypothesis is proposed:

# Hypothesis 3: The impact of Procedural Memory on Continuous Learning is positively mediated through Peripheral Vision.

#### 2.3 Linking continuous learning with organisational performance

This study also draws on prior theories about the beneficial impact of organisational learning on performance. This reinforces the argument that developing a culture of organisational learning potentially contributes to an improved performance (Bolívar-Ruano, 2012; Marsick, 2013), thus establishing foundations for a sustainable competitive advantage (Tippins & Sohi, 2003). Increased benefits and savings may also be expected as management perceives and interprets both focal and peripheral visual cues, leading the organisation to respond dynamically and efficiently to changes in the environment.

Furthermore, such alignment, re-alignment and adaptability potentially enable both management and employees to identify outdated systems (e.g. processes, routines, procedures, structural and cultural artefacts and knowledge) and introduce new approaches that are likely to improve productivity (Marsick, 2013). For example, in the case of customer-seller relationships in banks, employees who interact with customers directly can use their prior knowledge and skills to filter information, become better at discerning irrelevant information and therefore respond to customers more appropriately. Therefore, we propose:

*Hypothesis 4: The presence of continuous learning will determine the extent to which the branch achieves better organisational performance.* 

This study represents above relationships in the model shown in Figure 1.

# Insert Figure 1 about here

# 3. Method

#### **3.1 Data collection and measures**

The population used to provide a sample to test the hypotheses of this study comprised managers from bank branches of a major Spanish bank. Before conducting the surveys, managers from 690 branches of those attended by six or more employees in Spain were contacted by our team through a formal letter and invited to participate in the study. A total of 203 managers out of the 690 initially contacted agreed to participate in the study, for a response rate of 29.42%. Although all questionnaires come from branches from the same bank, it should be noted that each branch has its own budget. So, this study measures perceptions of different business units, each having specific objectives and resources.

Before undertaking the survey, a pilot survey was conducted involving a 60-min (consensus and revision) meeting with an expert panel (2 potential responders, 1 item writer, 1 research team and the translator). The goal of this meeting was not only to know, in detail, what they understood by items relating to procedural memory, peripheral vision and continuous learning, but also to compare independent translations of the same questionnaire and reconcile discrepancies and agree on a final version, which exploits the best of independent translations (Guillemin et al., 1993). As a result, several items were modified through this interview, and a first draft of the questionnaire was tested with three branches of this bank. The questionnaire constructs were operationalised as follows (see Appendix for a list of items):

- a) Organisational commitment was measured by using an adapted scale of Allen & Meyer, (1990). These four reflective items focus on the pride of working for the company, engagement, belonging and internationalisation of problems.
- b) Procedural memory has been measured with Tippins and Sohi (2003)'s scale. It is computed as a reflective construct with four items. It includes knowledge about routines, processes and procedures. For instance, procedures in place for the bank to meet demands of its existing customers. Finally, one item was removed in the process of refining the scales.
- c) Previous studies by Day and Schoemaker (2006) provide guidance in developing items to measure peripheral. Four items assessed the importance of 'peripheral vision' for cognitively aware managers in relation to the enhancement of technical,

administrative and social strategies due to a better understanding of the information available to potential customers.

- d) CL was assessed using the scale of Song et al. (2009), who used the instrument 'Dimensions of Learning Organisation Questionnaire' to measure the culture of organisations that learn and their performance. Five items were used to assess efforts of the organisation towards learning and the extent to which managers were inclined to support on-the-job CL.
- e) Organisational performance (OP) of the branch was measured by using three items initially proposed by Delaney and Huselid (1996). Authors adopted questions focusing on some characteristics of the branch with respect to its performance, such as the number of insurance policies sold to customers, the number of credit and debit cards related to the branch and the capacity of attracting new customers (e.g. payroll and pensions).

#### 3.2 Data analysis

To test if common method bias was present in our data, this study has used a confirmatory factor-analytic approach to the Harman one-factor test as a way of testing for the presence of bias (Podsakoff et al., 2003). A worse fit for the one-factor model would suggest that common method variance does not pose a serious threat. The one-factor model yielded a Satorra-Bentler  $\chi^2_{(170)}$ = 646.39;  $\chi^2$ /d.f=3.80 (compared with the Satorra-Bentler  $\chi^2_{(166)}$ = 301.02;  $\chi^2$ /d.f=1.81). This means that the fit is considerably worse for the one-dimensional model than for the measurement model, suggesting no substantial common method bias (Armstrong & Overton, 1977). To minimise data bias, these data were also analysed for common method bias using Harman's single factor test (Podsakoff et al., 2003; Podsakoff & Organ, 1986). Results of a post-hoc Harman's single-factor test showed that no one factor accounted for the majority of the covariance among the latent factors. Thus, the result indicates that common method bias is not likely to be a significant issue in the current study.

This study uses PLS-SEM as the best data analysis tool to test the model shown in Figure 1 because it is particularly recommended for 'unobservable and abstract constructs and reflects a more holistic and less blatantly causal interpretation of real-world phenomena representing social interactions and artefacts' (Massaro, Dumay, & Bagnoli, 2015: pp. 498). Data collected were analysed using the PLS-Graph software version 3.2.6 Build 1058. Organisational commitment, procedural memory, peripheral vision, CL and OP were specified as PLS Mode A composites given that they are determined by the theoretical construct and that there is a high level of correlation between indicators (Dijkstra & Henseler, 2015; Henseler et al., 2016).

As a first step, an assessment of the global model fit was required. As shown in Table 1, the fit statistics for the model indicate a reasonable data fit. The standardised root mean square residual (SRMR) value of the measurement model was 0.046 and all discrepancies were below the 99% quantile of the bootstrap discrepancies (HI<sub>99</sub>), which suggests a reasonable good measurement model fit (Henseler et al., 2014).

#### Insert Table 1 about here

As shown in Table 2, all indicators satisfy the requirement of individual item reliability. Almost all outer loadings are greater than 0.7. A few items with too low outer loadings have been removed. Hence, individual items are reliable. With regard to the reliability of scales for all measures, the evaluation criteria of 0.7 for composite reliability and 0.5 for

the average variance extracted were higher than Bagozzi and Yi's, (1988) composite reliability index and Fornell and Larcker (1981) average variance extracted index (Table 1).

#### Insert Table 2 about here

As shown in Table 2, discriminant validity was determined by comparing each construct that was more strongly related to its own measures than to others' (Fornell & Larcker, 1981). In addition, it is based on (Henseler et al., 2015) all variables that attain discriminant validity, because all HTMT are below 0.85 (Table 2).

#### Insert Table 3 about here

#### **3.3 Results**

Results show that the model has good predictive relevance because Q-square values are above zero. OP (Q<sup>2</sup>=0.046), CL (Q<sup>2</sup>=0.210), Procedural memory (Q<sup>2</sup>=0.062) and Peripheral vision (Q<sup>2</sup> = 0.256). As shown in Table 4, results of the hypothesis tests using bootstrapping show that organisational commitment is positively associated with both procedural memory (a<sub>1</sub>=0.326, p<0.01) and peripheral vision (a<sub>2</sub>=0.374, p<0.01). In addition, positive relationships exist between Procedural Memory and Peripheral Vision (a<sub>3</sub>=0.379, p<0.01) and between Procedural Memory and CL (a<sub>4</sub>=0.390, p<0.01). Results also show that Peripheral Vision had a positive influence on CL at a level of (a<sub>5</sub>=0.304, p<0.01), and that CL at a level of (a<sub>6</sub>=0.293, p<0.01) had a significant effect on OP.

#### Insert Table 4 about here

In this paper, we provide a post-hoc indirect effect analysis for indirect effects that is applicable for effects of independent variables on the dependent variable by the way of the mediator (Preacher & Hayes, 2008). As Table 5 shows, all indirect effects were found significant as the interval determined through bootstrapping does not contain the zero value (Preacher & Hayes, 2008). Consequently, results provided full support for hypotheses H1, H2, H3 and H4.

#### Insert Table 5 about here

We measure predictive power in our model following the Shmueli et al., (2016) procedure, which was implemented from version 3.2.6 of SmartPLS and developed later by Danks & Ray, (2018) and Shmueli et al., (2019). This procedure needs to make two decisions from the researcher such as: a) As it is recommended that the minimum size for a holdout sample be N = 30, number of folds was fixed at 6 according to our sample size; b) Number of repetitions were fixed at 10 (Shmueli et al., 2019). Results of this procedure start to assess the PLS-SEM  $Q^2_{predict}$  for indicators of dependent variable (i.e. OP), and then measure the skewness of prediction errors (i.e. root mean-squared error (RMSE). We check if PLS-SEM residual errors are greater than linear regression residual errors (i.e. LM), in which case we can state that the model has predictive power (Shmueli et al., 2019). Table 6 shows that all  $Q^2_{predict}$  for all OP indicators, are positive and, we use RMSE as residual errors because of high distribution symmetry of errors. As it can be seen, all residual errors for all three indicators are higher than LM, and therefore we can argue that our model has a high predictive power (Shmueli et al., 2019).

#### Insert Table 6 about here

#### 4. Discussion

While the peripheral vision of management facilitates a reorientation of the learning process of the organisation and that of its individual employees towards new outcomes, procedural memory stores information related to skills acquired and developed by an organism for executing behaviours and interacting with its environment. From the individual standpoint, such information can be related to the performance of certain procedures such as walking, talking or using a specific technology. In the context of an organisation, procedural memory refers to individual or organisational memories, which provide employees with access to knowledge learned from experience (Tippins & Sohi, 2003). This study has found that not only 'organisational commitment' supports both procedural memory and peripheral vision, but also organisational performance relies on both direct and indirect effects of procedural memory and peripheral vision.

Results of hypotheses one and two confirm that organisational commitment helps to maintain a balance between the implementation of organisational procedures and efforts to understand future needs of the client base in the context of Spanish banks. Therefore, commitment helps organisational members turn 'suggestions and complaints' into 'innovative products' despite adversity and allows employees to direct their efforts towards achieving a positive outcome (Abdullah & Ramay, 2012; Macedo et al., 2016; Valaei & Rezaei, 2016). Unless there is a prior commitment from employees, they will hardly be able to see beyond their daily duties. A possible explanation for these results might be that commitment to their organisation helps employees to assess and adopt good procedures (i.e. procedural memory), while helping them rethink the collective vision of the company (peripheral vision). In other words, the organisational commitment not only guides their actions, but also thoughts of employees.

However, high levels of commitment to the organisation helps not only to implement and follow banking procedures (i.e. procedural memory), but also raise future demands of new customers (i.e. peripheral vision). This may mean that 'organisational commitment' is a precondition not only to the effective implementation of current procedures, but also to rethink future values and needs of existing and new customers. This is in broad agreement with conclusions of authors such as Mackay and Burt (2015) who assert that learning engagement can be subject to a range of influences including a lack of peripheral awareness. This research goes a step further to argue that organisational commitment may be instrumental for an organisation in their efforts to translate a 'blurred' vision (e.g. a perception created by gossip spread by current and potential customers) into enhanced company knowledge.

In terms of Hypothesis 3, results of the analysis show a significant relationship between procedural memory and peripheral vision. A plausible explanation for this could be determined by the following two facts: (1) procedural memory provides managers with some degree of control over what is being done to accommodate needs of potential customers; and (2) such control could help management understand that the ultimate goal of the procedural memory is not just to understand and follow established routines, processes and procedures, but also to appreciate the subtle nuances of a potential customer and his or her thought process. As a result of a conscious expansion of the field of vision, an organisation that is targeting and trying to monitor the behaviour of potential customers could, for example, seek to obtain information – possibly from a customer regulator, on those customers' needs and expectations.

The above findings confirm that knowledge built on the existing procedural memory of a firm is useful for the conveyance of information to potential customers, as initially argued by Anderson (1983) and Moorman and Miner (1998). Results also show a significant relationship between procedural memory and continuous learning, which means that CL is facilitated by procedural memory. At an organisational level, routines, processes and protocols that form the procedural memory enable the performance of daily tasks and response to problems on the basis of institutionalised interpretations that have worked in the past (Kransdorff & Williams, 2000). In other words, by using what forms the procedural memory of the organisation, both employees and management can have the confidence that routine, standard tasks are being performed as expected. (e.g. Anderson, 1983; Day, 1994; Walsh & Ungson, 1991).

Results also revealed that the effect of procedural memory on organisational learning is partially mediated by the peripheral vision of the organisation. This means that the procedural memory of the organisation may be filtered (i.e. reassessed and reshaped) in light of the peripheral vision of its management. This could lead management to believe that using the knowledge acquired through their peripheral vision to reshape the procedural memory of the organisation may lead to past activities no longer being applicable in current situations (Hislop et al., 2013) or with potential customers (Cohen & Bacdayan, 1994; Walsh & Ungson, 1991). In that situation, peripheral vision becomes an important trigger for updating of procedural memory as it contributes to a process where new initiatives and ideas are received from potential customers.

With regard to Hypothesis 4, results show that there is a positive relationship between CL and OP. Organisations would need to develop new processes aimed at retaining and preferably enhancing their information base and thus improving their knowledge base, see (Bolívar-Ruano, 2012; Khamseh et al., 2017; Marsick, 2013; Tippins & Sohi, 2003). Mackay and Burt (2015) point out: an effective strategic learning process can catalyse the conversion of exploitation and exploration strategies into sustainable profit performance. In other words, if organisations gain a better understanding of existing and potential customers, they may develop the potential to predict earlier and respond faster to customers' changing needs (Chang & Tseng, 2005), leading to an improved OP.

#### 4.1 Managerial implications

From the practical point of view, there are two main implications for management, which are particularly relevant to the banking sector given the nature of data supporting our findings.

First, the relationship between procedural memory and peripheral vision points to the need for management to consciously review and update their procedures and routines, with a view to update their service offerings as and when required. Different market scanning mechanisms may help the management board to understand the dynamics of the competitive landscape where they operate. Effective information and knowledge scanning activities have the potential to focus management's attention on the identification of changing trends in customer needs and expectations, as well as the identification of new customers and value-adding opportunities and growth prospects.

Secondly, the confirmation of a positive relationship between CL and OP informs the value of management efforts to reach out to potential new customers and interact with them. For banks, learning from external sources also helps in improving the efficiency of branch staff to provide such new services.

Finally, research seeks to inform the management of the importance of learning from potential customers not as an end in itself, but as the starting point of a continuous and sustainable learning process (Hernes & Irgens, 2012; Smolarczyk & Hauer, 2014). Such a process needs to be reinforced not only by lessons learned by management through their peripheral vision, but also and more importantly by other individual and organisational factors that work differently with different organisations and the diversity of the workplace, that is, the procedural memory.

# **5.** Conclusions

Reflecting on the above discussion, there are two broad themes this paper wishes to highlight – to what extent it is possible to balance procedural memory and peripheral vision, and can organisational commitment support continuous learning? Our findings show that organisations could benefit from implementing CL mechanisms that at the same time seek to integrate internal procedures with outside knowledge (i.e. peripheral vision). These findings are important because, although several examples of organisational commitment have been studied and reported in the extant literature (Abdullah & Ramay, 2012; Cegarra-Navarro, Jiménez-Jiménez, García-Pérez, & Del Giudice, 2018; Turner & Chelladurai, 2005), the relationship between organisational commitment and peripheral vision has received very little attention. Therefore, this study contributes to strengthening managers' perception and understanding of links between these two key concepts.

Results show that CL was indirectly affected by organisational commitment, which provides significant clues to the necessity to channel the organisation's commitment into using procedural memory and optimising valuable and lasting customer relations. As the commitment of an organisation to simultaneously learn from its internal procedures and its relationships with potential customers is a subject that has generally been ignored in the literature, this study opens a range of opportunities for research and practice in this subject, because it provides evidence that this balance is not inherent to the organisation and therefore it requires a prior commitment. In other words, this balance can only be sustained if the company enhances employees' commitment to the necessary internal reforms by offering time and resources.

Although control variables are not included in the research model, specific control variables were considered to understand the extent to which gender, age and the length of service could be related to OP. It was found that these variables were not related to positive outcomes. Despite this, these results should be further explored as, for example, they may explain early retirement incentives that the banking sector has put in place in Spain, partly due to the lack of relationship between years worked and business results. The lack of a positive relationship may result from constant changes in the sector, and the demand for new financial products in electronic banking have meant that the experience gained over many years in the traditional banking services, unless it was updated is not vital for the current financial context.

In terms of managerial implications, this work points to peripheral vision and procedural memory as mechanisms for improving the organisational culture by setting new rules which can lead to new learning processes. In doing so, this research highlights the importance of encouraging knowledge workers to question and assess the validity of routines and procedures they regularly follow. This, of course, needs to be done in an environment that fosters innovation. In some cases, organisational routines and procedures are so organically established that knowledge workers have no choice but to follow them.

Despite its valuable insights, the research has limitations mainly derived from the analysis of a financial institution directly affected by its interaction with the dynamic environment where it operates. Having addressed some of the limitations associated with self-report surveys, it has been confirmed that common method biases are very difficult to quantify on any self-report study. Thus, further research could be undertaken to triangulate our findings through interviews and observational case studies.

It should also be highlighted that authors have assumed that peripheral vision focuses mainly on the understanding of needs and preferences of certain potential customers. Consequently, we have not considered the possibility offered by the ability to understand other stakeholders of the financial institution. This assumption is currently being explored. Future research will therefore focus on carrying out more extensive empirical testing of the model proposed in this study with an aim to establish its validity and impact on organisational management and OP. In addition, future research will focus on carrying out more extensive empirical testing of this model in other sectors, as well as the analysis of the 'social performance' of organisations.

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# Appendix 1: Questionnaire items

Organizational commitment: with respect to your current position indicate the degree of agreement or disagreement
(1=high disagreement and 7=high agreement):
OC1: I am proud of working for this company
OC2: I feel engaged with this company
OC3: I feel I belong to this company
OC4: I internalise company problems as my own problems
(Source: Adapted of Allen & Meyer, (1990))
Procedural Memory: with respect to your current position indicate the degree of agreement or disagreement (1=high
disagreement and 7=high agreement):
PM1: There is a standard procedure to meet demands of its customers
PM2: It has learned from past experiences on how to deal with conflicting clients
PM3: It has standard procedures followed to determine needs of their customers
PM5: The experience allows your customers to question effectively
(Source: Tippins & Sohi, (2003))
Peripheral Vision: with respect to your organisation, indicate the extent to which you agree or disagree (1=strongly
disagree and 7=strongly agree):
PV1: Managers seem to be open to new ideas of potential customers.
PV2: Management has tried to initiate innovations focused on potential customers.
PV3: Managers adopt suggestions of peripheral customers in the form of new routines and processes.
PV4: Managers are prone to collaborate with other companies and to solve potential customer problems together.
(Source: Day & Schoemaker, (2006))
Continuous Learning: with respect to your organisation indicate the extent to which you agree or disagree (1=strong
disagreement and 7=strong agreement):
CL1: Employees openly discuss mistakes to learn from them.
CL2: Employees identify skills needed for future work tasks.
CL3: Employees help each other to learn.
CL4: Employees can get support for an external learning.
CL6: Employees see problems in their work as an opportunity to learn.
(Source: Adapted from Song et al., (2009))
Organizational Performance: with respect to competitors they indicate the degree to which your company reached
objectives regarding the following in the last three years (1=did not reach at all and 5=reached easily):
OP1: The number of insurance policies
OP2: The number of credit and debit cards.
OP3: Attracting new customers (payroll, pensions and self-employed workers).
(Source: Adapted from Delaney & Huselid, (1996))





# Table 1 Global goodness of fit, Confirmatory composite analysis and bootstrap-based 95% and 99% quantiles

Goodness of Fit Measure	Estimated Model	Hi95	Hi99	Saturated Model	Hi95	Hi99
SRMR	0.068	0,072	0,089	0.088	0,077	0,092
duls	0.979	1.090	1.653	1.618	1.255	1.764
d <sub>G</sub>	0.416	0.481	0.635	0.693	0.479	0.618

Notes:

SRMR: Standardised Root Mean Square Residual; dULS: Unweighted Least Squares Discrepancy and dG Geodesic Discrepancy

Construct	loading	Reliability (SCR <sup>a</sup> ., AVE <sup>b</sup> )
Organizational Commitment (OC)		
OC1	0.909	AVE=0.763
OC2	0.859	SCR=0.928
OC3	0.904	
OC4	0.820	
Procedural Memory (PM)		
PM1	0.760	AVE=0.633
PM2	0.790	SCR=0.873
PM3	0.840	
PM5	0.790	
Peripheral Vision (PV)		
PV1	0.826	AVE=0.750
PV2	0.873	SCR=0.923
PV3	0.875	
PV4	0.888	
Continuous Learning (CL)		
CL1	0.817	AVE=0.643
CL2	0.879	SCR=0.900
CL3	0.816	
CL4	0.780	
CL6	0.707	
Organizational Performance (OP)		
OP1	0.894	AVE=0.696
OP2	0.894	SCR=0.872
OP3	0.701	

Table 2 Construct summary, confirmatory factor analysis and scale reliability

Notes:

<sup>a</sup> Scale Composite Reliability (SCR) of  $p_c = (\Sigma \lambda_i)^2 \operatorname{var}(\xi) / [(\Sigma \lambda_i)^2 \operatorname{var}(\xi) + \Sigma \theta_{ii}]$  (Bagozzi and Yi, 1988). <sup>b</sup>Average variance extracted (AVE) of  $p_c = (\Sigma \lambda i2 \operatorname{var}(\xi)) / [\Sigma \lambda i2 \operatorname{var}(\xi) + \Sigma \theta_{ii}]$  (Fornell and Larcker, 1981).

	Correlation m							atrix		
	Mean	S.D	CA	HTMT	1	2	3	4	5	
1. Organizational Commitment	4.299	1.527	0.897	0.547	0.873					
1. Procedural Memory	5.259	1.015	0.806	0.652	0.318	0.795				
2. Peripheral Vision	4.337	1.245	0.889	0.563	0.490	0.498	0.866			
3. Continuous Learning	4.849	1.241	0.859	0.563	0.342	0.547	0.496	0.801		
4. Organizational performance	4.647	1.236	0.781	0.471	0.290	0.192	0.395	0.274	0.834	

Table 3Construct correlation matrix

Notes:

Mean = the average score for all items included in this measure; S.D. = Standard Deviation; CA = Cronbach's Alpha; Intercorrelations are presented in the lower and shady triangle of the matrix. Bold numbers on the diagonal are the square root of the Average Variance Extracted.

			Confidence in		
Links	Path coefficients	t-values	5%Cl <sub>lo</sub>	95%Clhi	$\mathbb{R}^2$
$OC \rightarrow PM$	$a_1 = 0.326^{***}$	5.086	0.223	0.434	10.6
$OC \rightarrow PV$	$a_2=0.374^{***}$	6.421	0.282	0.474	37.6
$PM \rightarrow PV$	a3=0.379***	5.028	0.247	0.496	25.9
$PM \rightarrow CL$	a4=0.390***	4.489	0.240	0.526	36.3
$PV \rightarrow CL$	a5=0.304**	3.877	0.177	0.443	36.3
$CL \rightarrow OP$	$a_6 = 0.293^{***}$	3.788	0.170	0.424	8.8

# Table 4: Model statistics (direct effects)

Notes: \*\*\* <0.01

OC: Organizational Commitment, PM: Procedural Memory, PV: Peripheral Vision, CL: Continuous Learning and OP: Organizational Performance.

Indirect effects though	Point estimate	Percentile bootstrap 95% confidence interval			
		5%CI <sub>lo</sub>	95%CI <sub>hi</sub>	Sig	
$PM \rightarrow PV \rightarrow CL \rightarrow OP$	0.150***	0.095	0.235	0.000	
$PM \rightarrow PV \rightarrow CL$	0.115***	0.056	0.187	0.002	
PV→CL→OP	0.090**	0.044	0.163	0.007	
$OC \rightarrow PM \rightarrow PV =$	0.123***	0.076	0.174	0.000	
$OC \rightarrow PM \rightarrow PV \rightarrow CL =$	0.278***	0.209	0.359	0.000	
$OC \rightarrow PM \rightarrow PV \rightarrow CL \rightarrow OP =$	$0.082^{***}$	0.051	0.135	0.001	

# **Table 5: Indirect effects**

Notes: \*\*\* <0.01; ns=not significant OC: Organizational Commitment, PM: Procedural memory, PV: Peripheral vision, CL: Continuous Learning and OP: Organizational Performance.

		01			- 0			
PLS	RMSE	Q <sup>2</sup> _predict	LM	RMSE	Q <sup>2</sup> _predict	PLS-LM	RMSE	Q <sup>2</sup> _predict
OP1	1.491	0.033	RND1	1.500	0.021	RND1	-0.009	0.012
OP2	1.359	0.028	RND2	1.367	0.016	RND2	-0.008	0.012
OP3	1.559	0.023	RND3	1.561	0.020	RND3	-0.002	0.003

Table 6: Assessing predictive power of endogenous variables indicators