Loan Officer and the Evolution of Bank-SMEs Relationship in Tunisia

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Abstract

This paper empirically investigates the role of the loan officer in the evolution of the bank-SMEs relationship and its motivation for studying credit demand, its level of alignment to the hierarchy and its participation in the decision-making process. Based on a survey of 160 loan officers from two large Tunisian commercial banks: the 'Soci & Tunisienne de Banque' (STB) — as a public bank, and the 'Banque Internationale Arabe de Tunisie' (BIAT) — as a private bank, data analysis shows that self-esteem, need for success, autonomy in performing duties, and participation in the decision-making process are motivating factors at work for loan officers at both banks. The number of visits to the premises of the SME and the average length of interviews with its manager are considered important for the acquisition of *soft* information. Regarding the decision-making power, while a certain delegation has been instituted at the regional level in the BIAT, it is more the responsibility of the central committees in the STB. The decision of evolution depends more on the hierarchical superiors in a private bank that is why the BIAT officers are closer to their superiors than those of the STB.

Keywords: banks, small and medium-sized enterprises, soft information, loan officers, Tunisia

1. Introduction

In Tunisia, Small and Medium Enterprises (SMEs) are often exposed to credit rationing because banks consider them as opaque and risky entities (Adair & Fhima, 2013; Mouley & Hassen, 2017). By rationing credit to SMEs, Tunisian banks have lost strategic clients, given their importance in the Tunisian enterprises fabric (INS, Business Directory), while they can do otherwise and engage in a long-term relationship for the collection of specific information about these enterprises and the help in credit decision-making (Harhoff & Körting, 1998; Uzzi & Lancaster, 2003; Agarwal & Hauswald, 2010). The bank can offer the enterprise a multitude of services over time (Beck et al., 2018), which it can renegotiate many times in their different dimensions (Roberts, 2015), allowing it to better understand the enterprise's business environment, needs and resources (Ennew & Binks, 1995). Long-term relationships should thus make it possible to provide better support to the client company and, as a result, ease credit constraints, especially for small enterprises (Beck et al., 2018). According to Berger et al. (2001) and Berger et al. (2005), the ability to maintain a long-term relationship depends on the bank's characteristics, including its size and organizational structure. The presence of several hierarchical levels makes some banks less efficient in processing specific information and leads them to delegate decision-making to their loan officers (Berger & Udell, 2002); delegation that entails control costs and/or motivational that depends on each bank's characteristics (Jensen & Meckling, 1992; Stein, 2002).

The purpose of this article is to study the role of the loan officer in the evolution of the relationships between banks and SMEs in Tunisia, his motivation to investigate the credit file, his level of approach to the hierarchy, and his participation in the decision-making process. These subjective elements affect the banking decision (Grunert et al., 2005) but, despite the numerous studies on the banking decision-making process, little research has been done on the role of the loan officer in collecting and analyzing information during the bank-SME relationship (Lehman & Neuberg, 2001; Lipshitz & Shulimovitz, 2007). Based on a survey of 160 loan officers across two major Tunisian commercial banks: a public one – the "Société Tunisienne de Banque" (STB) and a private one – the "Banque Internationale Arabe de Tunisie" (BIAT); this paper would like to help fill the research gap on this issue.

The rest of the article is organized as follows: Section 2 begins with a literature review of the importance of

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long-term relationships in acquiring an informational advantage that varies according to characteristics, and shows the role of the loan officer in the collection of specific information and the decision-making to grant credit. According to this review, the hypotheses of our research are formulated. Section 3 presents the questionnaire developed to validate the hypotheses of our theoretical model and describes the various tests carried out to verify the convergent validity, the discriminating validity and reliability of variable part of this study. Section 4 outlines the results of the purification of the measurement scales of the variables and information integrated to our model which allowed us to decide on their value and consistency. The conclusion summarizes our key findings, discusses them and suggests leads for further researches.

2. Literature and Hypotheses

2.1 Literature

Finance is characterized by an asymmetry of information that plays in favor of the borrower, which will lead the bank to be very careful before engaging in any financing transaction. This caution and doubts often results in some financing difficulties, especially for SMEs whose banks consider their financing to be riskier than the one of large enterprises (Berger et al., 2001; Baas & Schrooten, 2006). For financing decisions, banks are often forced to reduce credit to SMEs (Levenson & Willard, 2000; Agostino et al., 2008; Farinha & Fáix, 2015). By doing so, banks although have succeeded in evicting borrowers with higher risks, but they may also have lost strategic customers, given the importance of SMEs in the whole structure of the business market. Banks may however seek to obtain as much information as possible in order to make a better assessment of the specific (idiosyncratic) risk to each category of borrowers. Indeed, in its activity, a bank can acquire two types of information: hard information (quantitative), found externally through public information (rating, score), and soft information (qualitative), through their own customer relationship (Berger & Udell, 2002; de la Torre et al., 2010; Foliard, 2011). The bank's quality of expertise lies in the long-term relationships that it maintains with its customers and therefore in the specific knowledge and information which come from it. Banks which invested in these customer relationships develop specific procedures to assess the quality of the borrowers (Berger & Udell, 2006; Cerqueiro et al., 2011; Trönnberg & Hemlin, 2014). These procedures result in informational benefits, which vary according to the characteristics of the banking institutions, they are mainly: size, structural factors, organization and geographic distance, and the type of ownership.

Regarding the enterprises' size, Petersen (2004), Cole et al. (2004), and Berger and Udell (2003) explain that smaller banks produce more *soft* information, while larger banks are more interested in *hard* information. An often empirically proven result is that, as a proportion of their assets, large banks give fewer loans to SMEs than smaller banks (Note 1). According to Berger et al. (2005), small banks have an advantage in terms of processing *soft* information and ease in establishing a long-term relationship with SMEs. They also make better choices in the selection of granted loans to SMEs (Note 2). Within small banks, management usually belongs to the same socio-economic community as the lender, so the bank is able to better assess a specific situation (Mester et al., 2005) and to exercise its controlling role (Nakamura, 1999).

In terms of organizational factors, small banks have a comparative advantage in estimating projects using *soft* information. Compared to larger banks, they often have a less complex structure and shorter decision-making processes (with only few hierarchical levels) (Berger & Udell, 2002; Stein, 2002).

The implementation of the several people involved in the decision-making process, in distinctive areas, increases the problems associated with the transfer of *soft* information (Hauswald & Marquez, 2003). Geographic distance generates additional costs and control problems for branch managers located far from the bank's headquarters, making it difficult to remotely monitor the quality of decisions based on *soft* information (Berger & DeYoung, 2001). In the presence of a wide geographical distance, it is more likely that the smaller local banks are better to cover the entire local sector through a commercial structure of greater geographical concentration.

Banks working in a given country may be public or private – as they may be local or foreign. According to Berger and Udell (2006), public banks have an advantage in the use of standardized techniques, but they have a disadvantage in the use of long-term relationships. They generally work with government loans and respond to mandates and recommendations provided to support the financing of certain borrowers. Although this policy is intended to improve the financing of SMEs, it could have some perverse effects as public banks can be ineffective as long as they are not subject to market rules and obligations.

Regarding the characteristics of banking institutions, it is difficult for large banks to establish a long-term relationship with enterprises because of the specific nature of the information that does not easily circulate between all the players involved in the credit decision and the different levels of management (Berger & Udell, 2002; Stein, 2002; Liberti & Mian, 2009). According to Milgrom and Roberts (1992), the expansion of the size

of these organizations often results in the problem of weakened coordination, a key element of the decision-making process. Large size is often accompanied by an increase in the number of steps and levels of decision which increases the amount of information transferred to higher levels. Faced to these information flows, they will find themselves unable to make the right decisions.

To deal with this problem, banks often decentralize, which consists of a split of powers between several people; that is a delegation of powers at the lower hierarchical levels in particular to those responsible for clientele (Bruns et al., 2008; Bruns & Fletcher 2008). Such a measure can be at the origin of agency problems. These responsible provide credit lines and loans to new borrowers to increase the number of clients, instead of checking pre-established relationships. Their reputation is generally based on the credits granted and on the short-term profitability achieved (Udell, 1989). Specifically, they tend to underestimate risk if the relationship is long and if the sector has an "excitement value" (McNamara & Bromiley, 1997, p. 1079). It is sometimes in the loan officer's interest to hide the financially degraded situation of an enterprise, for reasons of friendship with its manager or for illicit interests that he may acquire. Agency problems can also result from conflicts in the relationship between the agency head and the loan officer (Berger & Udell, 2002). Through a personalized relationship with his customer, the loan officer can have an informational advantage over other managers involved in the decision-making process. The close relationship between the loan officer and his client may lead him to choose an attitude that is more in the client's interests rather than those of the bank (Udell, 1989; Hertzberg et al., 2010). The difficulty of communicating the information, on which the loan officer relies, makes it difficult to be verified and controlled by his supervisors. In addition, they are more exposed to the lack of information when the power of the loan officer expands with the growth of his number of clients.

The solution to this problem is to increase control by separating the information collection function from the loan and credit allocation. Such a measure often affects the motivations of the loan officer who will no longer be motivated by the collection of specific information, since he no longer has the opportunity to justify it to his supervisors (Stein, 2002). According to Jensen and Meckling (1992), the cost of transferring knowledge increases with the size and structural complexity of the (banking) company. Another option available to the bank is to delegate the decision to grant credit to the loan officers and the agency managers and to set up adequate controls and motivation systems. The Jensen and Meckling's model (1992) is focusing on how the costs of knowledge transfer in an enterprise influence the choice of people with the decision-making rights as well as on the performance measurement and reward systems.

The prediction of Jensen and Meckling (1992) was tested by Nagar (1999) using a database of the structural practices from United States retail banks with respect to agency managers. His work shows the existence of a control system linked to the allocation of the decision-making rights to those responsible. This system measures their performance to determine the level of reward. In a later study, Nagar (2002) empirically verifies the link between the allocation of decision-making rights to agency managers in a retail bank and the reward and motivation systems. Based on a 1994 questionnaires-survey of 135 major United States banks, the study shows that banks that assign more decision-making rights to agency managers are those that use control and measurement systems, as well as more motivating reward methods than those used by other banks.

2.2 Hypotheses

The first hypothesis we will test is related to the types of motivation at work. This question is mainly studied by two currents: process theories, which describe the motivational process by "How we are motivated?" (Adams, 1963; Vroom, 1964; Locke, 1968), and content theories, which try to explain "What are we motivated by?" (Maslow, 1954; McClelland, 1961; Herzberg, 1968; Alderfer, 1969). Content can change from one job to another and from a worker to another one; but the process is applicable to all content. It is therefore a matter of identifying the needs of satisfaction in order to improve the employee's performance. According to Maslow (1954), the degree of motivation of a manager, who values the need for self-esteem and self-realization, is measured by the following proposals: an increase in salary or bonus (self-esteem), recognition from the supervisors (self-esteem), the development of professional skills (self-realization), and the search for great consideration by colleagues (self-realization). Being part of everything related to the work and the success of the organization gives an impression of being fully involved in the job, to invest in all the tasks and to up-to-date capabilities. The goal is to achieve the enterprise's objectives which the worker identifies – more or less – with his personal goals. The need for success is activated through working conditions where tasks are intended as indicators of the subject's abilities. Franc & (1995) shares the need for success in three factors: the need to do well, competitiveness and the desire to outpace others, and the need to master new tasks.

According to Herzberg (1968), the most important work needs are due to the degree to which individuals attach

importance to certain attributes of tasks such as variety, autonomy, the use of acquired knowledge, independence of thought, and participation in decision-making. These factors can be motivating factors for workers if they are presented as achievable and non-mandatory improvements.

Our first hypothesis, divided into three, is this one:

H1-a: Forms of motivation to work such as self-esteem, employment involvement, and the need for success encourage the loan officer to increase his commitment to work.

H1-b: Work motivational factors such as the diversity of tasks, autonomy in the performance of his duties, and participation in the decision to grant credit encourage the loan officer to increase his commitment to the job.

H1-c: The loan officer's handling of credit files must depend on his data collection effort.

According to Liberti (2004), the effort and motivation of loan officers in collecting and transferring specific information is affected by the level of delegation of decision-making rights. Banks choosing to provide credit to SMEs must then adopt a decentralized structure that results in the allocation of a significant level of participation to those who hold the specific information (Stein, 2002). At this level, decentralization is not just a matter of determining the decision-maker. While staffs at the lower level of the hierarchy are able to make decisions, when they are pre-planned by the enterprise's structural policy, a high degree of centralization persists. Moreover, decentralization and centralization should not be seen as absolutes, but rather as means of a continuum. Two dimensions are used in the literature: horizontal decentralization and vertical decentralization. Horizontal decentralization shows the dispersion of formal power down within the line of command (Note 3). This delegation of decision-making power can also be done at the lowest level. As for vertical decentralization, it focuses more on the collaboration of enterprise managers in the many decisions of the enterprise (Kalika, 1995). It is the collegial nature of decision-making; this means the number of people involved in decision-making that is apprehended here.

Our second and third hypotheses are the following ones:

H2: The level of loan officer's involvement in decision-making has an influence on the handling of the cases.

H3: The closer the loan officer is to his hierarchy, the more involved he is in the decision-making process.

3. Data and Tests

In order to test the plausibility of our hypotheses, we conduct a quantitative study by administering a questionnaire to a sample of loan officers of two Tunisian banks: STB and BIAT (Note 4). This choice is motivated by three main reasons: the first is the size of these banks; in terms of total assets, they are the two largest commercial banks in Tunisia; this allows us to take into account the effect of size and structural complexity. The second is that STB is a public bank and BIAT is a private bank which allows us to see the importance of the ownership of structure on the activity of lending money to SMEs. The third is the loan activity of these two banks; with the National Agricultural Bank, STB and BIAT account for more than 40% of all loans granted by listed banks (AFC, 2012, p. 8).

3.1 Elaborating the Questionnaire

The prepared questionnaire (Appendix 1) brings together questions, elements and variables that help test and validate the assumptions of our model (Note 5). These survey variables can be brought together in three groups. The first relates to variables measuring the efforts made by the loan officer to find information from the director of the SME. The motivation of these managers to seek qualitative information is measured by a first type of skill that is reflected in the maintenance of privileged contacts with the customer. At this point, we are talking about the "Customer Contact" dimension which is dealt with by questions three, four and five. The second group determines the level of motivation of the loan officer in his work. The items proposed in question six help measure the elements of "Motivation by Meeting Needs" or "Motivation to work". Question seven proposes employment attributes proposed by management but not sought by the manager in question. It is based on the principle of diversifying and enriching the tasks (Herzberg, 1968). These attributes can encourage a manager to increase performance if they are proposed as a motivator. The proposed items measure the constructed "Task Attributes" or "Motivational Factors at Work". The third group determines the degree of decentralization of the decision-making power based on two elements, namely vertical decentralization and horizontal decentralization. Question eight verifies the hierarchical level on which the loan officer (vertical decentralization) depends. It corresponds to the element called "hierarchical level". Question nine specifies the collective nature of decision-making (horizontal decentralization). It allows us to measure the "Participation in decision-making" element. Question ten is used to test decentralization in terms of monitoring and controlling the work at the agency level. This element is called "Follow and Control".

3.2 Data Collection and Testing

The objective of our study is not to compare our theoretical model with several banks, but with several individuals with the same function and belonging to the same hierarchical level, namely the loan officers within the two banks chosen (Note 6).

The data collection began with a qualitative study conducted in the form of semi-directive interviews with 10 loan officers from 10 STB agencies and 10 loan officers from 6 BIAT agencies. This study allowed us to collect a lot of information for the development of a preliminary version of the questionnaire and to test the clarity and level of understanding of the questions asked. These contacts and interviews allowed us to learn about the sources of information used by this manager to decide on a credit application and to identify the practices he is choosing to gain the trust of his customers (interviews carried out, visits to enterprise's premises, etc. (Guille, 1994). The questionnaire was first tested with the loan officers of the agencies where the case studies were conducted and, secondly, with 80 STB loan officers and 80 BIAT loan officers. After the pre-test and due to difficulties in understanding certain proposals by some of the officials, we made some changes to some of the proposals. We conducted a test survey on 15 STB agencies and 20 BIAT agencies located in the Greater Tunis region. The questionnaire was self-administered to each loan officer in our presence in order to see the difficulties encountered by the respondent and explain the main themes of the questionnaire. The objective of the test survey is to assess the level of match of the item measurement scale with the requirements of respondents. The measurement of these elements is then done by using the five-point Likert scale to indicate the level of agreement from the people answering the survey (Cf. Appendix 1). Finally, for the final survey, we used the non-probabilistic method of sampling which involves selecting, through a non-random process, individuals who have experienced significant experiences related to the subject of study and being easily reachable and available (Fortin, 2010).

The geographical space for our study covers: the great Tunis, Mahdia, Monastir, Sousse, Nabeul, Manouba, Bizerte, and Sfax. The administration of our questionnaire, with several loan officers located in different regions and assigned to different agencies – that should respond differently to environmental variables (Hayes, 1977) – allows us to explain and compare the evolution of the allocation of decision-making rights in the two banks studied. The questionnaires were given to the loan officers after having carried out an agency interview. The goal being to highlight the reasons and the purpose of the questionnaire while guaranteeing them anonymity. It was a nine months period for our investigation (July 2012 to March 2013).

4. Results of the Purification of the Measuring Scales of the Elements of the Model

The elements we are trying to clean up are: Workplace motivation forms, Workplace motivation factors, Data collection skills, Loan officer participation level within the agency and management, and Involvement of the officer in decision-making.

4.1 Workplace Motivation Forms (H1-A Hypothesis)

The analysis of this element – including the items in question 6 – reveals that the loan officers of both banks agree (31.2%), or even strongly agree (23.8%), that a salary or bonus increase is important in terms of self-esteem, and these are the STB officials who are more sensitive to it (30%) than their BIAT counterparts (25%) (Table 1), despite generally higher salaries offered in Tunisian public banks (World Bank, 2014, p. 217).

Table 1. Cross table of the self-esteem-1

			STB	BIAT	Total
Self-esteem-1	Not at all agree	Size	14	8	22
(A salary or bonus		% of total ^a	8.8	5.0	13,8
increase)	Disagree	Size	10	9	19
		% of total ^a	6.2	5.6	11.9
	Neither disagree nor agree	Size	8	23	31
		% of total ^a	5.0	14.4	19.4
	Agree	Size	23	27	50
		% of total ^a	14.4	16.9	31.2
	Absolutely agree	Size	25	13	38
		% of total ^a	15.6	8.1	23.8
Total		Size	80	80	160
		% of total ^a	50.0	50.0	100.0

^{a.} The reasoning is by column, dividing the size in question by the total of the loan officers of the two banks, for example: 8.8% = 14/160.

The increased recognition on the part of the supervisor is not significantly different between the two institutions (chi-square = 0.075; Appendix 2A). In line with Maslow's theoretical predictions (1958), loan officers at both banks consider this to be important in terms of self-esteem. It motivates them indirectly and allows them to expect a reward and an evolution in the future (Table 2).

Table 2. Cross table of the self-esteem −2

			STB	BIAT	Total
Self-esteem-2	Not at all agree	Size	14	9	23
(Increased recognition		% of total ^a	8.8	5.6	14.4
from your supervisor)	Disagree	Size	10	9	19
		% of total ^a	6.2	5.7	11.9
	Neither disagree nor agree	Size	8	21	29
		% of total ^a	5.0	13.1	18.1
	Agree	Size	23	24	47
		% of total ^a	14.4	15	29.4
	Absolutely agree	Size	25	17	42
		% of total ^a	15.6	10.6	26.2
Total		Size	80	80	160
		% of total ^a	50.0	50.0	100.0

^{a.} The reasoning is by column, for example: $8.8\% = \overline{14/160}$.

BIAT officials seek the consideration of their colleagues who can influence the line managers and their evolution in a private bank. The chi-square test is significant (chi-square = 0.034; Appendix 2B) which means that STB officials are not too concerned about this consideration, which has only a "Prestige" effect in a state bank where evolution is structured and follows standards and laws provided for by the labor code (Table 3). This translates into lower performance pressure in the workplace. In this sense, the self-realization of the "Professional skills development" item is clearly different from the importance given; it is higher on the BIAT side; the test being significant (chi-square = 0.045; Appendix 2C). These results confirm the difference between working in a private bank and working in a state-owned bank (Table 4), and may explain the weaker performance of Tunisian public banks than those of other banks (World Bank, 2014, p. 222).

Table 3. Cross table of the self-realization–1^a

			STB	BIAT	Total
Self-realization-1 (Seeking	Neither disagree nor agree	Size	0	4	4
greater consideration by your		% of total ^a	0.0	2.5	2.5
colleagues)	Agree	Size	32	21	53
		% of total ^a	20.0	13.1	33.1
	Absolutely agree	Size	48	55	103
		% of total ^a	30.0	34.4	64.4
Total		Size	80	80	160
		% of total ^b	50.0	50.0	100.0

a. Unlike the table for question 6, here the scale contains three choices instead of five because the respondents chose only these three answers.

Table 4. Cross table of the self-realization -2

			STB	BIAT	Total	
Self-realization –2 (Professional	Agree	Size	33	21	54	
skills development)		% of total ^a	20.6	13.1	33.7	
	Absolutely agree	Size	47	59	106	
		% of total ^a	29.4	36.9	66.3	
Total		Size	80	80	160	
		% of total b	50.0	50.0	100.0	

^{a.} The reasoning is by column, for example: 8.8% = 14/160.

^{b.} The reasoning is by column, for example: 20% = 32/160.

The two items relating to participation or involvement in employment (5th and 6th items in question 6) do not depend on the status of the bank; the managers of both banks want to apply their own methods and the development of their own action plans. At this level, the manager is well involved and well-motivated (Table 5 and Table 6).

Table 5. Cross table of the participation-1

			STB	BIAT	Total	
Participation-1 (Applying your	Disagree	Size	1	2	3	
methods, your personal work		% of total ^a	0.6	1.2	1.9	
practices)	Neither disagree nor agree	Size	10	13	23	
		% of total ^a	6.2	8.1	14.4	
	Agree	Size	31	36	67	
		% of total ^a	19.4	22.5	41.9	
	Absolutely agree	Size	38	29	67	
		% of total ^a	23.8	18.1	41.9	
Total		Size	80	80	160	
		% of total a	50.0	50.0	100.0	

^{a.} The reasoning is by column, for example: 0.6% = 1/160.

Table 6. Cross table of the participation -2

			STB	BIAT	Total
Participation-2 (Developing an	Disagree	Size	1	1	2
action plan and/or strategy		% of total ^a	0.6	0.6	1.2
defined by the agency (or bank)	Neither disagree nor agree	Size	9	12	21
to process credit cases)		% of total ^a	5.6	7.5	13.1
	Agree	Size	31	36	67
		% of total ^a	19.4	22.5	41.9
	Absolutely agree	Size	39	31	70
		% of total ^a	24.4	19.4	43.8
Total		Size	80	80	160
		% of total ^a	50.0	50.0	100.0

^{a.} The reasoning is by column, for example: 0.6% = 1/160.

Regarding the commitment to the enterprise, the test is non-significant (chi-square = 0.713; Appendix 2D). This means that the managers of both banks are fully committed to achieving the objectives of their agencies.

The need for success – as presented by the last three items of question 6 (Acquiring new skills, Wanting to get ahead of other loan officers, and Adapting work to every situation encountered) – is a goal for managers of both banks. They are always looking, through training, to learn new ways of working to get ahead of others (Table 7).

Table 7. Distribution of the need for success in percentage

	Need for success -1		Need for si	uccess –2	Need for si	uccess -3
	STB	BIAT	STB	BIAT	STB	BIAT
Not at all agree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	0.0	0.0	0.0	0.0
Neither disagree nor agree	0.0	0.0	0.0	0.6	0.0	0.6
Agree	21.9	15.6	21.9	17.5	21.9	17.5
Absolutely agree	28.1	34.4	28.1	31.9	28.1	31.9

A review of the percentages of responses to items in this element (Table 8) shows that respondents are seeking to meet the need for success, a participation and involvement in employment.

Table 8. Purification of the construct "Motivation to work" (question 6)

Label of the	Correlation	Cronbach's alpha	Extraction	Percentage	Percentage of variance explai	
item i		when the item is		Axis 1:	Axis 2:	Axis 3:
		deleted		42.925	21.643	15.889
Self esteem-1	0.448					
Self esteem -2	0.446					
Self realization-1	0.632	0.744	0.855			0.659
Self realization -2	0.676	0.732	0.864			0.621
Participation-1	0.578	0.738	0.911		0.693	
Participation-2	0.573	0.739	0.917		0.729	
Commitment to work	0.725	0.797	0.129			0.253
Need for succes-1	0.629	0.713	0.961	0.879		
Need for succes -2	0.648	0.721	0.901	0.835		
Need for succes -3	0.805	0.721	0.899	0.839		
KMO = 0.681	Global	Cronbach's alpha = 0.76	54	Need for succes	Participation	Self realization

The results summarized in the table above confirm the three-dimensionality of the "Motivation to work" construct, which affirms the advances of theory in this field (Franc &, 1995; Herzberg, 1968). The KMO index is significant (0.681). The coefficients of the anti-image matrix are greater than 0.5, except for items 1 and 2, that will be eliminated from the analysis (Note 7). The percentage of variance explained is in the order of 81%; it is broken down as follows: the first factor recovers about 43% of the total variance, the second recovers almost 22%, and the rest is recovered by the third factor. The scale is well reliable, Cronbach's alpha is 0.764. The F1 factor includes the three items that measure the need for success: Acquiring new skills, Wanting to outpace others, and Adapting work to each situation encountered. The F1 axis is called "Need for Success". The F2 factor includes the two items measuring participation or involvement in employment, namely: Application of personal working methods and practices, and Development of an action plan or strategy defined by the agency. The F2 axis is called "Participation". The F3 factor includes the two items that measure self-realization, namely: Salary or bonus increase, and Increased recognition by the supervisor. The F3 axis is called "Self-Realization". These results, grouped into an element called "Behavioral factors", show that the first hypothesis relating to forms of work motivation is mainly verified in Tunisia in privately banks.

4.2 Motivational Factors at Work (Hypothesis H1-b)

The analysis of this element – including the five items in question 7 – shows that, regardless of the bank, the loan officers consider it is important and that they are in complete agreement. Within Tunisian banks, the diversity of tasks, autonomy in the exercise of their activity, decision-making initiative, the use of knowledge, and participation in decision-making are motivating factors at work; the chi-square test is insignificant (Appendix 2E). A review of the percentages of responses to these latter items (Table 9) shows that loan officers are looking for a participatory structure. These results confirm the one-dimensionality of the "Structural Motivation at Work" element.

Table 9. Purification of the construct "motivating factors at work" (question 7)

Label of the item i	Correlation	Cronbach's alpha when	Extraction	Percentage of variance explained: 69.694
		the item is deleted		Axis 1: 69.694
Diversity of tasks	0.905	0.875	0.632	0.795
Autonomy in the performance of duties	0.868	0.856	0.723	0.850
Initiative in the decision-making	0.819	0.842	0.785	0.886
Use of the knowledge gained from the	0.853	0.855	0.717	0.847
processing of cases				
Participation in the grant credit decision	0.900	0.875	0.628	0.792
KMO = 0.865	Glo	bal Cronbach's alpha = 0.	.886	Organizational

In the table above, the KMO index is significant (0.865) and the coefficients of the anti-image matrix are greater than 0.5. The percentage of variance is in the 70% for a single factor. The scale is well reliable; the Cronbach's alpha is 0.886. The F1 factor includes the last five items measuring the organizational motivator. The F1 axis is called "Organizational". Hypothesis *H1-b* relating to work motivation factors is verified.

4.3 Data Collection Skills (Hypothesis H1-C)

Regarding the item "Number of interviews with the head of the SME" (question 5), there is a difference between the two banks (chi-square = 0,000; Appendix 2F). BIAT loan officers perform a lower number of maintenance (1 to 2) (Table 10).

Table 10. Number of interviews with the head of the SME

		1	2	3	4	Total
BIAT	Size	37	33	9	1	80
	% of total ^a	23.1	20.6	5.6	0.6	50.0
STB	Size	15	48	13	4	80
	% of total ^a	9.4	30.0	8.1	2.5	50.0
Total	Size	52	81	22	5	160
	% of total ^a	32.5	50.6	13.8	3.1	100.0

^{a.} The reasoning is by column, for example: 23.1% = 37/160.

As meeting time is significant (chi-square = 0.001; Appendix 2G), STB loan officers spend more time with the head of the SME than those of BIAT (Table 11).

Table 11. The average duration (in hours) of interviews with the head of an SME

	10	15	20	25	30	45	60	Total	
BIAT	0	13	13	2	34	9	9	80	
STB	1	8	19	0	16	8	28	80	
Total	1	21	32	2	50	17	37	160	

The frequency of visits by managers of two banks is not the same (chi-square = 0.000; Appendix 2H). STB loan officers make more visits to their clients (Table 12). These latter results, although they suggest that STB officials are more motivated by collecting specific information, raise the question of the relevance of the information collected by STB officials about the time spent with their clients (number and length of interviews). We found above (Tables 3 and 4) that STB officials are under less pressure in terms of job performance, and that Tunisian public banks are less efficient than other banks (Banque, 2014, p. 222). This observation calls for further work on the relevance of the information collected by the customer service representatives in terms of the percentage of non-performing loans in the assets of Tunisian banks.

Table 12. Frequency of visits by managers (Number)

		1	2	3	Total
BIAT	Size	70	10	0	80
	% of total ^a	43.8	6.3	0.0	50.0
STB	Size	27	36	17	80
	% of total ^a	16.9	22.5	10.6	50.0
Total	Size	97	46	17	160
	% of total ^a	60.6	28.8	10.6	100.0

^{a.} The reasoning is by column, for example: 43.8% = 70/160.

The results summarized in Table 13 confirm the one-dimensionality of the "Data collection activity" element.

Table 13. Purification of the construct "Data collection activity"

Label of the item i	Correlation	Cronbach's alpha when	Extraction	Percentage of variance explained: 63,406
		the item is deleted		Axis 1:63,406
Interviews	0.755	0.092	0.685	0.827
Average duration of interviews	0.705	0.340	0.787	0.887
Frequency of visits	0.823	0.097	0.429	0.655
Average length of a credit	0.817	0.058	0.636	0.797
application study				
KMO = 0.761		Global Cronbach's alpha = 0.623		Data collection

The KMO index is significant (0.761), with the coefficients of the anti-image matrix greater than 0.5. The percentage of variance explained is in the order of 63% for a single factor. The scale is well reliable, Cronbach's alpha is 0.623. The F1 factor includes the four items in question five. The corresponding axis is called "Data Collection". The loan officer's effort depends on his motivation at work, structural factors, and his skills to collect data. To do this we will perform an analysis in principal components for items: Need for success, Participation and self-realization, Behavioral motivation factors, Structural motivation factors, and Data collection activities. The KMO index is significant (0.761), the anti-image matrix coefficient being greater than 0.5 for most items, with the exception of Need for success and self-realization which will be eliminated from the analysis. With a total variance of around 41% (Table 14) we were able to extract a common factor called "Subjective effort of the loan officer". Concerning the *H1-c* hypothesis relating to the effort to collect information for the processing of credit files, it is confirmed specifically in state-owned banks, regardless of the relevance of the information collected.

Table 14. Purification of the construct "Subjective effort"

	Label of the item i Correlation		Extraction	Percentage of variance explained: 40,954
				Axis 1:40,954
Motivation forms	Need for success	0,464	·	·
	Participation	0,547	0,382	0,616
	Self realization	0,442		
Motivation factors	Organizational	0,520	0,518	0,601
Data collection activity	Data collection	0,505	0,589	0,699
	KMO = 0,761			Subjective effort

4.4 Level of Participation (Hypothesis H2)

Regarding the item "You do not issue an opinion but the head of the agency consults you before issuing his opinion" (question 9), most managers of the two banks face this situation, more than 93% (chi-square = 0.12; Appendix 2I). This means that agency heads rely on the advice of their loan officers who are in direct contact with SMEs managers. Similarly, 93.7% of the managers give their opinion on the basis of that of the head of the agency, without difference between the two banks (chi-square = 0.618; Appendix 2J). However, there is a difference for the item "Give your opinion after talking to the head of the agency" (chi-square = 0.038; Appendix 2K). This seems clear, especially on the side of BIAT's loan officers who place greater importance on their supervisors, who have a say in the decision of their evolution. Nevertheless, giving advice independently of one's supervisor is having a lot of importance to the loan officers of the two banks and without difference (chi-square = 0.126; Appendix 2L).

On the regional management side, and for the two banks (chi-square = 0.064; Appendix 2M), clarifications and suggestions are only requested from the loan officer who knows the file best and who can the best to answer to all suggestions. According to this officer, when the head of the agency participates in the credit committee, he transfers his suggestions to management, that is more than 73% (71+46/160 in Table 15) – without difference between the two banks (chi-square = 0.581; Appendix 2N).

Table 15. The head of the agency participates in the credit committee

		Neither disagree nor agree	Agree	Absolutely agree	Total
BIAT	Size	19	32	29	80
	% of total ^a	11.9	20.0	18.1	50.0
STB	Size	24	39	17	80
	% of total ^a	15.0	24.4	10.6	50.0
Total	Size	43	71	46	160
	% of total ^a	26.9	44.4	28.8	100.0

^{a.} The reasoning is by column, for example: 11.9% = 19/160.

The analysis of the "Level of participation in decision-making" (Table 16) identifies two main factors: the first recovers 52.586% of the overall information and the second recovers 15.178%; together they exceed 67%. As the scale of measurement is reliable, the Cronbach's alpha is around 0.882 and the KMO index is significant (0.828).

This analysis reveals a part called "Direction notice" that includes: Clarification, Management consultation, Assistance of the chief and Assistance with direction to the work of the committee, and a part called "Agency notice" which brings together the other items. Hypothesis H2 relating to the importance of the involvement of the loan officer in decision-making for the collection of information is verified.

Table 16. Purification of the construct "Agency Direction"

Label of the item i	Correlation	Cronbach's alpha when the item is	Extraction	U	variance explained: 7,764
		deleted		Axis 1: 52,586	Axis 2: 15,178
No opinion issued but consultation by the head	0.857	0.874	0.722		0.834
of the agency					
An opinion based on the one provided by your	0.827	0.875	0.798		0.888
head of agency					
An opinion after discussing it with the head of	0.871	0.865	0.779		0.826
the agency					
An opinion independently of the head of the	0.920	0.874	0.462		0.567
agency					
Only asks the head of the agency for	0.914	0.859	0.646	0.587	
clarification					
Regional management consults you on details	0.907	0.865	0.682	0.786	
Head of the agency attends the committee	0.822	0.867	0.785	0.879	
meeting					
An opinion on a decision within the	0.883	0.873	0.632	0.782	
jurisdiction of the regional management					
Attend the credit committee's work	0.922	0.865	0.594	0.667	
Cronbach's alpha all items included		0.882			
KMO = 0.828				Direction notice	Agency notice

4.5 Involvement in the Decision-Making Process (Hypothesis H3)

The analysis of question 8 – "Do you feel close to the hierarchical level empowered to make credit decisions" (Table 17) – reveals that the loan officers of both banks are close to their hierarchical superiors at 85% (65+71/160 in Table 17). These conclusions are valid for both banks (chi-square = 0.140; Appendix 2O), although BIAT officials outperform their STB counterparts; they are 90% and 80% respectively (35+37/80 and 28+36/80 respectively in Table 17).

Table 17. Level of proximity to the hierarchical level empowered to make decisions

	Neither disagree nor agree	Agree	Absolutly agree	Total
STB	16	28	36	80
BIAT	8	37	35	80
Total	24	65	71	160

According to the results of question 10 (Table 18), more than 85% of the loan officers of the two banks agree that the head of the agency give clear instructions to follow at each stage. They see that the rules and procedures are formulated in advance and they agree. They further assert that the expected results and performance to be achieved are specified by management without defining the working procedures. That said the bank aims to achieve its goal without defining the tools and processes of loan officers. The decision to grant credit is influenced by the skills and personal environment within the agency. They believe that coordination between them and their leaders is effective.

A principal component analysis of these different items (Table 18) shows that direct monitoring and control is felt by the managers of both banks.

Table 18. Purification of the construct "Monitoring and control"

Label of the item i	Correlation	Cronbach's alpha when the item is	Extraction	Percentage of the variance explained: 71,001
		deleted		Axis1: 71,001
Instructions of the agency head	0.877	0.865	0.742	0.862
Rules formulated by the central management	0.838	0.866	0.737	0.859
Expected results	0.832	0.852	0.807	0.899
Skills and personal environment within the agency	0.914	0.891	0.590	0.768
Coordination loan officer- head of the agency	0.880	0.877	0.673	0.820
KMO = 0.864 Globa	l Cronbach's a	lpha all items include	d = 0.893	Monitoring and control

As a result, it appears that the loan officers of both banks, although they are involved in their agencies in terms of lending decisions, are not well involved in management. This proves that the decision is more centralized in both banks. The hypothesis H3, relating to the relationship of the officer with the hierarchy, is therefore partially validated in terms of involvement in the decision-making process.

5. Conclusion

The purpose of this paper is to empirically verify the role of the loan officer in the evolution of the bank-SMEs relationship and his motivation to investigate the credit file, his level of approach to the hierarchy, and his participation in the decision-making process. Analysis of data from a survey of 160 loan officers from two major Tunisian banks (STB and BIAT) shows that the managers of both banks attach importance to factors related to self-esteem, such as salary increase, bonus and recognition from their supervisor, and the need for success, such as the desire to outpace others, the acquisition of new skills, and the adaptation of work to each situation encountered. They emphasize autonomy in the performance of their duties and participation in the decision to grant credit as motivators at work. Direct contacts, in terms of the number of visits to the SME's premises and the average duration of interviews with its manager, are considered important for the acquisition of specific information (soft information) useful for deciding on a credit application. When transferred to headquarters, this information is accompanied by different interpretations of the loan officers, which vary according to their motivations (Nagar, 2002). According to Stein (2002), in banks with a centralized structure, loan officers will be all the less incentive to collect this information as they are little sure of being rewarded for their efforts. For this reason, some banks delegate decision-making rights to these officials and, as a result, establish control and motivational systems that are costly to the enterprise (Jensen & Meckling, 1992). In fact, the quality of the decision relies on the delegation of the collection and evaluation of specific information to loan officers (Bruns & Fletcher 2008; Bruns et al., 2008). This implies, according to Uchida et al. (2012, p. 98) that "the relevant relationship in SME lending is the loan officer-entrepreneur relationship, not the bank-entrepreneur relationship". In Tunisian banks (of our sample), decentralization of decision-making powers is the responsibility of the central committees in the STB. To a large extent, these decisions are based on studies carried out by services, created within the directorate-general. In the BIAT, a certain delegation of decision-making powers has been instituted at the regional level. Regional committees hold periodic meetings to decide on credit applications beyond the authority of agencies, group managers, and the area manager. In addition, BIAT officers are closer to their supervisors than those in the STB. Compared to public banks, the decision to evolve in a private bank depends more on the hierarchical superiors, which encourages the loan officers of private banks to be closer to their hierarchical superiors.

The originality of our empirical methodology, described as hypothetic-inductive, lies in the adoption of a multi-method approach in data collection. To this end, the techniques implemented are observation and semi-directive interviews with the loan officers of our sample.

Our results can serve as a starting point for interesting future research, given the ongoing changes in the Tunisian banking system towards a concentration strategy, usually through merger and acquisition (Hakimi et al., 2015). It would be interesting to analyze the evolution of the motivational and evaluation systems of loan officers in a context of bank consolidation, which will provide potential explanations for the effects of concentration on the volume of loans granted to SMEs, and more broadly, on the bank-SMEs relationships. Is there a risk that more SMEs will be push out further from bank credits and loans? It would also be interesting to study the relevance of the information collected by loan officers in the assessment and monitoring of borrowers by examining the methodology for processing bank credit risk, which involves the collection and use of relevant information on borrowers to mitigate information asymmetry (Grunert et al., 2005; Karapetyan & Stacescu, 2013).

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Notes

Note 1. Strahan and Weston (1996) find, for the period of 1993–1996, that the increase in the size of US banks (measured by total assets) has a negative impact on the volume of loans to SMEs. For banks with less than \$ 100 million in assets, the share of loans to SMEs is 0.088 and down to 0.050 and 0.034 for bank assets between \$ 1

billion and \$ 5 billion and assets over \$ 5 billion respectively. Similarly, Berger et al. (1999) find, for the year 1997, that US banks with total assets under \$ 100 million present 9% of their portfolio in the form of credit to SMEs (less than \$ 1 million) against only 2% for those whose total assets exceed \$ 10 billion.

Note 2. Carter et al. (2004) compare the returns on SME loans granted by a sample of 3,263 American banks over the period 1996-1999. They find that small banks (with total assets of less than \$ 1 billion) have a return equal to 11.10% compared to 9.46% for large banks.

Note 3. Mintzberg (1978) states that the strategic summit is linked to the operating center by the hierarchical line. This line ranges from the ranks below the strategic top up to the top level coaching that has power over the operators.

Note 4. At the end of year 2018, The Tunisian banking system was composed by 42 banking and financial institutions, including 23 resident banks, 8 leasing companies, 2 factoring companies, 2 investment banks, and 7 non-resident banks (BCT, 2018, p. 127).

Note 5. A construct is constructed from many indicators that form together a scale for measuring the intensity of a well-defined phenomenon. Each of these indicators is defined as items (Churchill, 1979).

Note 6. According to Mia and Chenhall (1994) and Chenhall (2003), analyzing a single function or a single activity within a company seems to be sufficient to apprehend the coherence and the complementarity of the organizational structure's components.

Note 7. The anti-image matrix is an additional observation of the factorizable character of data which was not included in this paper as well as other additional statistical tests. But, they can be available upon request.

Appendix 1. Questionnaire

- 1. What is the name of your bank? The location of your agency?
- 2. The characteristics of the loan officer (gender, age, training, ... etc.)
- 3. What kind of contact do you prefer with the manager of a small business for which you are responsible? Please rank these contact modes from 1: "most important" to 5: "least important":

Meeting	Phone	Email	Fax	Mail
•				

4. Please check the level of importance you place on each SME data collection activity described below?

	Not at all	Not	Slightly	Important	Very
	important	important	important		important
Interviews (in numbers) with the head of an SME requesting a credit					
The average duration (in hours) of interviews with the head of an SME					
requesting a credit					
The frequency of visits (in numbers) to the premises of an SME					
requesting a credit					
The average length of time (hours, day or month) to complete a credit					
application study					

5. Please indicate the number or duration of data collection activities?

Number or duration (hours, days or months)

Interviews (in numbers) with the head of an SME requesting a credit

The average duration (in hours) of interviews with the head of an SME requesting a credit

The frequency of visits (in numbers) to the premises of an SME requesting a credit

The average length of time (hours, days or months) to complete a credit application study

6. Please check the following forms of work motivation that encourage you to increase your commitment to work?

Disagree Fully Not agree Neither agree Agree at all nor disagree agree A salary or bonus increase Increased recognition from your supervisor Seeking greater consideration by your colleagues Developing your professional skills Applying your methods, your personal work practices Developing an action plan and/or strategy defined by the agency (or bank) to process credit cases Commitment to achieving the agency's goals Acquiring new skills The desire to get ahead of other loan officers Adapting work to each situation

7. Do you consider these aspects of your job to be motivating factors?

	Not agree	Disagree	Neither agree	Agree	Fully
	at all		nor disagree		agree
The diversity of tasks					
The autonomy in the performance of your duties					
The initiative in the decision-making					
The use of the knowledge gained from the processing of cases					
The participation in the decision to grant credit					

8. Do you feel that you are close to the hierarchical level empowered to make credit decisions?

	Not agree at all	Disagree	Neither agree nor disagree	Agree	Fully agree	
--	------------------	----------	----------------------------	-------	-------------	--

9. To what extent, does each of these actions describe the level of your participation in decision-making?

	Not agree	Disagree	Neither agree	Agree	Fully
	at all		nor disagree		agree
You do not issue an opinion but the head of the agency consults you					
before issuing his opinion					
You give an opinion based on the one provided by your head of agency					
You issue an opinion regarding the decision to grant the credit after					
discussing it with the head of the agency					
You issue an opinion independently of the head of the agency					
The regional management only asks the head of the agency for					
clarification					
The regional management consults you on details of the study					
presented by the agency					
The head of the agency attends the committee meeting and tells about					
your suggestions					
You give an opinion on a decision within the jurisdiction of the					
regional management					
You attend the credit committee's work to formulate your opinion					

10. What do you think of the following statements about the following management activities provided by your bank's management?

	Not agree at all	Disagree	Neither agree nor disagree	Agree	Fully agree
The agency head's instructions are defined at each stage of the work, with no standards to follow					
The rules, processes are formulated in advance by the central management for the exercise of your activity					
Expected results and performance to be achieved are specified by management without defining work processes					
Skills and personal environment within the agency influence the decision to grant credit					
The coordination between you and the head of the agency is effective (achieved)					

Appendix 2. Chi-square tests

A	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	8.512 a	4	0.075
Likelihood ratio	8.743	4	0.068
Linear-by-linear association	0.053	1	0.818
Valid observations number	160		

^{a.} 0 cells (0.0%) have a theoretical size of less than 5. The minimum theoretical size is 9.50.

В	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	6.759 a	2	0.034
Likelihood ratio	8.321	2	0.016
Linear-by-linear association	0.196	1	0.658
Valid observations number	160		

^a 2 cells (33.3%) have a theoretical size of less than 5. The minimum theoretical size is 2.00.

С	Value	Degrees of freedom	Asymptotic value (bilateral)	Exact significance (bilateral)	Exact significance (unilateral)
Pearson chi-square	4.025 a	1	0.045		
Correction pour la continuit &	3.382	1	0.066		
Likelihood ratio	4.050	1	0.044		
Test exact de Fisher				0.065	0.033
Linear-by-linear association	4.000	1	0.046		
Valid observations number	160				

^a 0 cells (0.0%) have a theoretical size of less than 5. The minimum theoretical size is 27.00.

^b Calculated only for an array 2x2.

D	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	0.678 ^a	2	0.713
Likelihood ratio	0.678	2	0.712
Linear-by-linear association	0.444	1	0.505
Valid observations number	160		

^a2 cells (33.3%) have a theoretical size of less than 5. The minimum theoretical size is 4.00.

E	Chi-square test
Diversity of tasks	0.344
Autonomy in the performance of duties	0.869
Initiative in the decision-making	0.245
Use of the knowledge gained from the processing of cases	0.333
Participation in the grant credit decision	0.440

F	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	57.395 a	2	0.000
Likelihood ratio	63.946	2	0.000
Linear-by-linear association	55.525	1	0.000
Valid observations number	160		

^{a.} 0 cells (0.0%) have a theoretical size of less than 5. The minimum theoretical size is 23.50.

G	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	21.611 a	6	0.001
Likelihood ratio	23.418	6	0.001
Linear-by-linear association	7.344	1	0.007
Valid observations number	160		

^a 4 cells (28.6%) have a theoretical size of less than 5. The minimum theoretical size is 0.50.

Н	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	50.758 a	2	0.000
Likelihood ratio	58.908	2	0.000
Linear-by-linear association	48.345	1	0.000
Valid observations number	160		

^{a.} 0 cells (0.0%) have a theoretical size of less than 5. The minimum theoretical size is de 8.50.

I	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	7.303 ^a	4	0.121
Likelihood ratio	8.182	4	0.085
Linear-by-linear association	7.153	1	0.007
Valid observations number	160		

^{a.} 6 cells (60.0%) have a theoretical size of less than 5. The minimum theoretical size is 0.50.

J	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	1.784 ^a	3	0.618
Likelihood ratio	1.844	3	0.605
Linear-by-linear association	0.838	1	0.360
Valid observations number	160		

^a 4 cells (50.0%) have a theoretical size of less than 5. The minimum theoretical size is 2.00.

K	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	10.172 ^a	4	0.038
Likelihood ratio	11.572	4	0.021
Linear-by-linear association	7.728	1	0.005
Valid observations number	160		

^a 4 cells (40.0%) have a theoretical size of less than 5. The minimum theoretical size is 0.50.

L	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	7.189 ^a	4	0.126
Likelihood ratio	8.109	4	0.088
Linear-by-linear association	6.303	1	0.012
Valid observations number	160		

^a 4 cells (40.0%) have a theoretical size of less than 5. The minimum theoretical size is 1.00.

M	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	8.867 ^a	4	0.064
Likelihood ratio	9.046	4	0.060
Linear-by-linear association	4.508	1	0.034
Valid observations number	160		

^a 2 cells (20.0%) have a theoretical size of less than 5. The minimum theoretical size is 2.00.

N	Value	Degrees of freedom	Asymptotic value (bilateral)	
Pearson chi-square	3.781 ^a	5	0.581	
Likelihood ratio	4.222	5	0.518	
Linear-by-linear association	2.422	1	0.120	
Valid observations number	160			

^a 4 cells (33.3%) have a theoretical size of less than 5. The minimum theoretical size is 0.50.

0	Value	Degrees of freedom	Asymptotic value (bilateral)
Pearson chi-square	3.927 ^a	2	0.140
Likelihood ratio	3.983	2	0.137
Linear-by-linear association	0.600	1	0.439
Valid observations number	160		

^a 0 cells (0.0%) have a theoretical size of less than 5. The minimum theoretical size is 12.00.

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