

INTRAPRENEURSHIP AND PROCESS INNOVATION IN THE BANKING SECTOR: THE MEDIATING ROLE OF ORGANIZATIONAL STRUCTURE

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Abstract

As the main determinants of competitiveness change from classical low-cost labor and economies of scale to innovations, innovative companies have started redefining competition and base their strategies on factors driving process innovation, such as intrapreneurship. This study empirically investigates the determinants of process innovation at the company level (micro). Employees of public and private banks operating in the banking sector of Turkey were surveyed. Considering intrapreneurship as a determinant of innovation and organization structure as an impact factor, we conduct analyses based on regression and structural equation modelling. We conclude that there is a positive relationship between process innovation and intrapreneurship, and that organizational structure has a partial mediating role in the decisiveness of intrapreneurship on innovation. These results are in line with the findings in the literature.

Keywords: innovation, process innovation, intrapreneurship, organizational structure, mediation, banking sector

Introduction

In today's markets, the main determinants of competitiveness are not classical tools, such as low-cost labor and economies of scale, but rather, innovations (Porter, 1998). Organizations that can innovate will redefine the conditions of competition in the markets they operate, as an active player rather than a reactive player; they will be able to focus on the opportunities of the future instead of those of the present (Kuczmariski, 1996).

The factors enabling innovation are as important as innovation for organizations. Such factors have been defined as innovation determinants in the literature and have been examined extensively. There is ample evidence that intrapreneurship, defined as innovations that provide competitive advantage in an established organization (Burgelman, 1984), is one of the most important factors which leads to innovation (Hsu et al., 2014). This is because it provides the ability to implement risky ideas and transform them into commercial value (Soriano & Huarng, 2013). It is accepted that factors of intrapreneurship, such as challenging changes, uncertainty (Lin et al., 2006),

risk taking, and proactivity (Hornsby et al., 2013), also constitute the main factors of innovation.

Intrapreneurship provides organizations with strategic advantages for long-term success through the ability to design new processes, products, and services. The first of these is taking advantage of new opportunities and carrying the innovation process forward by dealing with bureaucracy (McFadzean et al., 2005). The second is transforming organizational resources into innovative products and processes through new combinations (Zahra, 2015). The third is increasing operational capacity, and the fourth is challenging change and market uncertainty (Lin et al., 2006). Change has shortened the lifetime of not only existing products and services, but also of new products and services, which can now be expressed in months instead of years. For instance, the recent coronavirus pandemic has required sudden changes in the structure of many products and services, as well as their production and presentation processes. The ability to adapt quickly to change and the capacity to survive will only come with new methods and processes (Zhang et al., 2015). Investments by organizations in new processes will be the most strategic attempt, as it will increase competitors' barriers to entry into the industry. Meanwhile, while they are perceived as uncertain and risky by markets, these

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investments do provide a significant competitive advantage to businesses (Wang et al., 2016). While it is easy to imitate a new product, it is not possible to know how the processes in the organization are managed and how the thousands of tasks involved are done. Resource-based theory, which advocates the efficient use of resources owned by organizations, argues that unique and hard-to-imitate resources and capabilities are the main determinants of obtaining competitive advantage (Collis, 1994). Despite its advantages, intrapreneurship is not only a micro-level concept, but a macro concept applicable to all sectors as well as the economy as a whole. This is because it increases competitiveness and productivity in the economy, which in turn enables the development of the best organizational practices and the formation of new industries.

Related studies have focused on physical products, ignoring the service industry and opportunities provided by it. However, the service industry represents a more important center, in terms of economic growth, employment, and innovation. For instance, 60% of the gross domestic product and 55% of the employment in developed and developing countries are provided by the service industry. The significant size of the industry has increased the severity of competition while challenging the survival of organizations. This situation further enhances the significance of determinants of innovation in the industry. The determinants of innovation will also be different in the service industry due to the unique characteristics of services (Morrar, 2014), such as intangibility, heterogeneity, inseparability, perishability, which differentiates them structurally from physical products. Due to the unique nature of the service industry, the success of innovation in this field depends heavily on human-related factors. This is because the completion of the processes in the service industry depends on the interaction between the service provider and the service user. Innovations in this sector also require instant creativity because the service is shaped according to the needs of the user (Hilorme et al., 2018).

The banking sector has several important functions in the economy. The sector finances investments and consumption by collecting fund surpluses in the market and granting loans to those in need of funds, that is, it provides the working capital and investment financing requirements of other industries and mediates the payment systems. Another important contribution

of the banking sector to the economy is that it finances growth. For instance, the asset size of the Turkish banking sector at the end of 2019 was 4,490,818 million TL; its loans were 2,655,946 million TL and deposits were 2,566,900 million TL. This figure is larger than Turkey's gross domestic product. The number of active banks in the sector is 47 and the number of branches is 10,245. As Turkey is located at the intersection point of different political, economic, and geographical regions such as Europe, Asia, Africa, and the Middle East, establishing sustainable commercial and economic affairs between these different structures and geographies will be possible with a strong banking system. However, the burden because of a crisis in this sector will be equally unsettling for both the neighboring countries and Turkey's own economy. For instance, the banking crisis in 2001 resulted in an economic shrinkage of 9 % in Turkey. Considering the impacts of the banking sector on the economy, it can be argued that this field should be studied on priority.

This paper is organized in four parts: In the first part, the subject, significance, and purpose of the study are given. In the second, the theoretical framework, model, and hypotheses are explained. In the third, the results of the study on the Turkish banking sector and a literature review of the subject are discussed. Finally, we evaluate the current study and examine the scope for future studies.

1. Innovation and Its Determinants

Examining the studies on the definition of innovation, derived from the Latin *innovatus*, we found that the definition is based on the diverse approaches used at various times. Some researchers have highlighted the commercialization dimension of innovation and defined it based on the way it is perceived. For instance, while Mohr (1969) defines innovation as products, services, processes, and improvements perceived as new, Damanpour (1991) defines innovation as tools and policies. Other researchers have emphasized the economic and social dimension of innovation and defined the changes and impacts it creates on the structure and processes of organizations. According to these researchers, innovation constitutes social and economic improvements and processes that can change customers' preferences and behaviors, thereby increasing operating income (Drucker, 1985).

Some scholars emphasized defining innovation as inventing and discovering and assumed that its

dimension of commercialization would occur spontaneously. Knight (1967) defined innovation as a product, practice, or process that is first realized within the organization and its environment; Schumpeter (1934) defined it as the practice of a new production method, the discovery of a new market, and having a new resource or organization. The most comprehensive definition of innovation is presented in the Oslo Guide (2005) as the application of a new or significantly modified product (goods or service) or process, a new marketing method or a new organizational method in organizational practices, workplace organization, and external relations, thus transforming innovation into economic and social benefit. The common emphasis of all definitions is that innovation requires creativity and novelty, which is generally accepted and transformed into commercial value.

Different factors have been studied as determinants of innovation. Initial studies addressed ownership (Love & Ashcroft, 1999), organizational size (George et al., 2005), management support (Montalvo, 2004; Zahra, 1996) and intrapreneurship as potential determinants. Larsson (2010) studied the role of intrapreneurship in innovation and found that intrapreneurship plays an important role in companies that radically innovate. He stated that proactivity, risk taking, and autonomy dimensions are important in innovation. Similarly, in his study on executives of various levels, Lassen (2007) concluded that intrapreneurship is decisive in realizing radical innovation. Other studies on intrapreneurship have reached similar results. For instance, Pearce and Carland (1996) argued that there is a positive relationship between product innovation and intrapreneurship; Gapp and Fisher (2007) stated that innovation is realized through intrapreneurs. There is a limited number of studies on the determinants of innovation, generally on the service sector and specifically on banking. In addition, in terms of innovation success, we believe that more distinct results will be achieved with more distinct studies based on sectors.

2. Process Innovation

As with the definition of innovation, there is no common opinion in the literature on the types of innovation. While some researchers have grouped them under two main categories, product and process innovations (Brouwer, 1991), others grouped them as radical and gradual innovations (Hine & Ryan, 1999), considering the common

features of innovation. While radical innovations include entirely new product and service categories or production and distribution systems, gradual innovations involve the development, improvement and adaptation of existing products and services or production and distribution systems. On the one hand, radical innovations require high risk taking and advanced commercialization skills, as they include advanced technology, high investment costs, and market uncertainty (Veryzer, 1998). On the other hand, gradual innovations refer to the development and modification of products and services with simple changes, without the need for high marketing, research, and commercialization capabilities. These kinds of innovations are preferred more because they are less risky for organizations, can be performed in the short term, and are relatively easy to implement (Samli & Weber, 2000). Organizations prefer gradual innovations more than radical innovations. The most important aspect of gradual innovation is process innovation.

Process innovation generally refers to improvements and changes in a company's output production processes (Kim et al., 2012). These processes require the use of advanced technological methods and aim to increase the speed, quality, efficiency, and reliability of operations (Jayaram et al., 2014; Piening & Salge, 2015). It includes creative application of knowledge and skills. It requires designing uniquely developed processes and building unique operational capabilities (Kim et al., 2012). Intensive use of technology increases the competitiveness of organizations. This process takes place through employees' adoption, learning and effective application of technological systems to organizational processes. However, the creation of new processes to prevent risk factors, such as complexity in technological processes and causal uncertainty, should be considered within the framework of process innovation (Piening & Salge, 2015; Un & Asakawa, 2015).

Process innovation provides competitive advantage in many areas, such as improving production processes, shortening production times and reducing costs, increasing the quality and lifetime of products and services, meeting more user needs and providing higher satisfaction, and making processes more flexible. In addition, there are also factors that negatively affect the service innovation process. The first of these factors are economic factors, including the cost of innovation, economic risks, and lack of funding. The second are internal factors, including

employees' lack of technical knowledge about the market, organizational structure and processes, and external factors, such as the customers' indifference to new processes. Process innovation was examined as the dependent variable in this study.

3. Intrapreneurship and Process Innovation

Rapid change in environmental factors leads to uncertainty in the markets which then increases competition. The efforts of organizations to adapt quickly to change, benefit from new opportunities and survive have brought a new dimension to entrepreneurship. This concept, which includes activities such as inducing entrepreneurial thinking in the employees of the organization and realizing organizational transformation and innovation, has been referred to as intrapreneurship. Although it has been examined by many studies, there is no universal definition of intrapreneurship. For instance, some researchers have defined it as innovations that provide competitive advantage in an established organization (Burgelman, 1984); alternative processes, competencies and values that increase operational capacity (Damanpour, 1991); and the process of bringing flexibility to organization, which becomes cumbersome and worn out over time due to bureaucracy and hierarchy because of the size of the organization (Thornberry, 2001). Others define it as a process that includes and encourages issues such as risk taking and developing new products, services, and production methods (Antoncic & Hisrich, 2001; Zahra, 1996), regardless of the size of the business. In the most comprehensive definition accepted today, intrapreneurship is regarded as innovation within an existing business. Intrapreneurship differs from classical entrepreneurship in terms of advantages, such as benefiting from all opportunities of the organizational structure including resources, brand, trade name, and market share.

The most studied dimensions of intrapreneurship are innovativeness, risk-taking, acting proactively, aggressive competitiveness and autonomy (Lumpkin & Dess, 1996). When we examine the definition of intrapreneurship dimensions, it may be argued that it expresses both a process and a result. Some researchers have defined innovativeness as the focal point of intrapreneurship activity and the method of generating creative, extraordinary, and original solutions to internal problems and requirements (Davis et al., 1991). Others defined it as the

process of transforming organizational resources into new products, services, and processes by creating new combinations (Zahra, 1991) or as the commitment level of the organization to innovation (Drucker, 1985; Ireland et al., 2001). The second dimension, acting proactively, refers to acting as a pioneer in identifying and benefiting from future problems, requirements, changes, and new opportunities (Lumpkin & Dess, 1996). This concept refers to a constant search for market opportunities and experiences. It refers to sensing opportunities in the market, creating new products and services, and applying new management methods (Antoncic & Hisrich, 2001; Covin & Slevin, 1991). It is the tendency to change and shape the industry in which it operates (Zahra, 2015). The third dimension, risk-taking, is considered a fundamental element of intrapreneurship and an integral part of the tendency to start new ventures. It is defined as the tendency to allocate most of the resources to uncertain and risky projects, seizing opportunities in the market and gaining high profits. It requires being able to act fast, form resource combinations and take bold action. In other words, it is the tendency to support innovative projects even in cases where the result is not clear. The fourth dimension, aggressive competitiveness, refers to the tendency to gain an advantage over competitors in the markets in which it operates. It describes taking effective measures to eliminate threats encountered during the competition process (Lumpkin & Dess, 2001). The last dimension, autonomy, refers to employees' ability to act independently in presenting an idea or a vision and achieving it (Lumpkin & Dess, 1996). It is the ability of employees to make independent decisions and determine a method for creating a new business idea or developing existing operations (Hornsby et al., 2002).

Intrapreneurship drives transformation in an established organization (Van de Ven & Engleman, 2004). Its ability to proactively carry out risky and uncertain processes makes it the most important factor in innovation (Lassen et al., 2006). Similarly, some studies show that this process is also valid for innovation. Within the framework of the literature, intrapreneurship has been studied as a determinant of process innovation in this study, and the following hypothesis is proposed:

Hypothesis 1: Intrapreneurship positively affects process innovation.

4. Mediating Role of Organizational Structure

In the most basic sense, organization is defined

as the structures created by more than one person to achieve a certain purpose. The sharing of the organization's resources, the distribution of decision-making power and the management of internal and external relations (Matsuno et al., 2002) are vital for organizational success. In the literature, organizational structure is a concept referring to the positioning among these factors that make up the organization. Researchers classify them by considering the account critical missions, such as strategic processes namely distribution of powers, level of specialization, coordination of activities and complexity level, centralization, and hierarchical structure (Lee et al., 2015). Classification of organizations not only provides them with a better understanding, but also facilitates the determination of the factors that affect the attitudes and behaviors of employees. Kuratko et al. (2014) argue that organizational boundaries play a significant role in sharing information which leads to innovation. It enables innovative ideas to spread across departments. In the literature, many classifications have been proposed by considering different criteria and perspectives. The mechanical and organic organization classification created by Burns and Stalker (1967) is most used, in which the mechanical system refers to a rigid structure while the organic system refers to a flexible structure (Dust et al., 2014).

In mechanical organizational structure, the units that make up the organization act independently of each other while performing the tasks assigned to achieve their goals and their low level of complexity (Damanpour, 1991). These features make it difficult for employees to participate in decision-making processes and prevent them from expressing new ideas. In these structures, where task-related roles are defined very precisely and clearly, only the top managers know the goals and objectives of the organization (Cunliffe, 2008).

In the organizational literature, it has been suggested that innovation projects cannot be successfully carried out in these structures, which prevent employees from accessing resources, sharing information, and participating in decision-making processes (Covin & Slevin, 1988, 1989). Other researchers have argued that, contrary to popular belief, structures facilitate innovation (Miller & Friesen, 1982). For instance, Tatikonda (1999) stated that the relationship between executive formality and innovation is positive. Some researchers, however, concluded that mechanical and organic structures are not

alternatives to each other but complementary (Jaworski & Kohli, 1993).

In organic organizational structures, the rules are flexible, communication and coordination are encouraged, decision-making powers are diffused throughout the organization, and the organization can adapt to external changes more quickly (Cunliffe, 2008). This adaptability is obtained not only in terms of organizational processes, but also in terms of the mental adaptation processes of the employees. Therefore, it enables employees to move out of the status quo and reduce the uncertainty associated with technological change. Such features allow employees to adopt the organization more and to reveal their ability to innovate and creativity (Damanpour, 1991).

Some researchers argue that information sharing between departments and hierarchies in the organization is an important factor in obtaining competitive advantage (Calantone et al., 2003; Day, 1994). Structures that increase the flexibility of employees and ensure their participation in decision-making processes will be effective in the innovation process, as it provides them greater autonomy and the opportunity to cope with uncertainty (Hage & Dewar, 1973; Tatikonda, 1999). Within this framework of the literature, we hypothesize that:

Hypothesis 2: Organizational structure affects process innovation, such that the more organic the structure of banks, the more the process innovation.

The innovation capacity of organizations in the service sector depends on their intellectual assets and ability to mobilize them. One of the most important skills organizations can have is intrapreneurship. Intrapreneurship struggles with the factors that hinder innovation in an organization. The first of these factors is bureaucratic: central organizational structures that are closed to change and internal and external communication (Thornberry, 2001).

Zahra (2015) argues that intrapreneurship creates innovative knowledge in organizations. In this context, intrapreneurship improves the organizational structure as a means of entering new markets or improving the organization's position in existing markets. The dimensions of intrapreneurship also require this (Zahra, 2015).

While the innovation dimension of intrapreneurship aims to create flexible, open-to-change, and dynamic organizational structures that can utilize new opportunities, the autonomy and risk-taking dimensions create structures that will enable independent decision-making and

initiative (Lassen et al., 2006) and efficient distribution of resources. Proactivity and social networks also aim to create organizational structures open to internal and external communication for the promotion and marketing of innovations.

Considering the interaction of intrapreneurship with the organizational structure and the relative importance of the organizational structure in the service sector compared to other sectors, our hypothesis was proposed as follows.

Hypothesis 3: Intrapreneurship positively affects the organic structure of banks.

The organizational structure facilitates access to internal and external information, sharing, using, transforming, and creating new knowledge, enabling employees to demonstrate and apply their creative abilities. Michellone and Zollo (2000). In addition, access to organizational resources and participation in decision-making processes encourages employees to innovate (Miller, 1983).

Difficult, risky, complex, and uncertain innovation processes can be managed with organic organizational structures (Calantone et al., 2003; Day, 1994). Flexible structures open to information sharing, active participation in decision-making processes, taking initiative and open to change, minimize the risks arising from uncertainty. These structures enable employees to reveal their creativity, design original products and services, and produce effective solutions to problems. Considering the impact of the organizational structure on the innovation creation process, it was considered an influencer of innovation, and we proposed the following.

Hypothesis 4: Organizational structure mediates the relationship between intrapreneurship and process innovation of banks.

5. Method

5.1. Sample

The field study was applied to public and private sector bank employees in the Turkish banking sector. Questionnaires obtained from the literature as well as questionnaires created based on a 5-Scale Likert were sent via e-mail to 4,000 people selected from public and private bank employees, and responses were received from 600. Of these, 133 were not taken into consideration as they were filled incorrectly or incompletely. Thus, the analysis was based on 467 questionnaires.

Of our respondents, 52% are male and 48% female. Regarding education level, 49% are

graduates of faculties, 11% are two-year high school graduates, and 40% are high school graduates. Regarding work experience, 30% of them have worked for 0-10 years, 36% for 10-20 years, and 44% for 20 years; furthermore, 46% work in public banks and 54% in private banks. Regarding their departments, 40% work in marketing, 30% in loans, 20% in operations, and 10% in support units; considering authority groups, 40% are managers and 60% are dependent employees.

5.2. Scales

5.2.1 Process innovation

As a scale of process innovation suitable for use in the study could not be obtained from the literature, a new scale was created. A mixed method of quantitative and qualitative research methods were used for scale development. Questionnaire and semi-structured interview techniques were used as data collection tools. In the literature, the models and research scales created for innovation (Cheung et al., 2001; Damanpour & Schneider, 2009; Leonard-Barton & Deschamps, 1988; Thompson et al, 1991) were examined and used in the development of the new scale in our study. In addition to the data set obtained from the literature, the opinions of academicians and managers in the banking sector (60 individuals) were used. Through structured interviews, we focused on the incomprehensible and inaccessible issues which cannot be surveyed through the questionnaire. In particular, the attitudes and opinions of managers who direct process innovation were analyzed in depth, and we ensured that the findings obtained from the surveys were understood and discussed in a wider framework. The data collected through the questionnaires distributed to the respondents and the data obtained as a result of the interviews were analyzed with package and statistical evaluation programs, and a new scale was created using reliability and validity tests (Appendix 1).

5.2.2 Intrapreneurship

Intrapreneurship of the employees was measured using scales obtained from the literature, consisting of a total of 21 questions adapted from Covin and Slevin (1989) and Lumpkin and Dess (2001). The size of aggressive competitiveness consisted of four questions, size of innovation consisted of four questions, risk-taking consisted of five questions, the autonomy dimension consisted of three questions, and the size of social networks consisted of five questions.

These were arranged on a five-point Likert scale, and the options ranged between "1-strongly disagree" and "5-strongly agree."

5.2.3 Organizational structure

Organizational structure was measured with a scale obtained from the literature, consisting of nine questions: the organic organizational structure size consists of four questions and the mechanical organizational structure size comprises five questions (Khandwalla, 1976). These are arranged on a five-point Likert scale, and the options range between "1-strongly disagree" and "5-strongly agree."

Statistical methods were used to determine the validity and reliability of the scales. Their

validity was controlled by convergent and divergent validity. Indicator reliability (Cronbach's alpha) and internal consistency values were determined to control their reliability.

5.3. Validity and Reliability

In the study, kurtosis and skewness coefficients were calculated to examine the compatibility of intrapreneurship, organizational structure, and process innovation scores to normal distribution. As shown in Table 1, it is found that the kurtosis and skewness values of the scales and their sub-dimensions are between -3 and +3. The kurtosis and skewness values obtained are considered sufficient for a normal distribution (Hopkins & Weeks, 1990; De Carlo, 1997).

Table 1. Descriptive Statistics of Scale Scores

Variable	Indicator Reliability (λ)	Internal Consistency (CR)	Convergent Reliability (AVE)	Skewness	Kurtosis
Intrapreneurship	0,925	0,95	0,48	-0,383	0,690
Organizational Structure	0,800	0,87	0,49	-0,155	0,202
Process Innovation	0,923	0,93	0,51	-0,738	0,908

Table 1 shows that the AVE values of intrapreneurship, organizational structure, and process innovation were calculated as 0.48, 0.49, and 0.51, respectively. In the literature, it is stated that if AVE values are not significantly less than 0.5, the latent variable has convergent validity (Cheung & Wang, 2017). These results indicate that the latent variables have convergent validity.

The indicator reliability (Cronbach's alpha) and internal consistency values of variables in the models created for intrapreneurship, organizational structure, and the process innovation scales (Table 1) are calculated as 0.92, 0.80 and 0.92, respectively. These values are

greater than 0.70, which, in the literature, is considered the lower threshold for the social sciences. These results show that the variables in the measurement model are valid and reliable.

6. Findings

In line with this information, the relationship between intrapreneurship, organizational structure, and process innovation was analyzed using the Pearson correlation test, while the mediating role of organizational structure and the effect of intrapreneurship on process innovation was analyzed using the PROCESS macro method developed by Hayes (2017).

Table 2. Correlations between Study Variables

Variables					
1.	Intrapreneurship		1		
2.	Organizational Structure		,301**	1	
3.	Process Innovation		,681**	,402**	1

** $p < 0.01$

Table 2 shows that there are positive correlations between intrapreneurship, organizational structure, and process innovation.

According to the analysis results, intrapreneurship affects process innovation and organizational structure at a statistically significant level. Based on the impact coefficient,

the effects are positive and significant ($b=0,596$; $p<0,05$ and $b=0,359$; $p<0,05$ respectively).

When these results are examined, the impact coefficient of intrapreneurship is 0.596 when process innovation is the dependent variable, and 0.539 when organizational structure, which is the mediator variable, is included in the model.

In the process analysis, when the indirect impact of the independent variable on the dependent variable was examined, it was determined that the organizational structure confidence interval did not include 0 (zero) (0,040–0,460). According to this result, the mediation effect of organizational structure is

significant.

Furthermore, the Sobel Z test was used to test the significance of the mediating effect. The Z coefficient was calculated as 3.34, and it was found to be statistically significant ($p < 0,05$). Accordingly, the mediating impact of the organizational structure is significant.

Table 3. Mediation Analysis Results

Path/effect	Bootstrap Estimates		95% Confidence Interval		R ²	F
	B	SE	Lower Limit CI	Upper Limit CI		
Intrapreneurship → Process Innovation	0,596*	0,039	0,520	0,672	0,474	238,453*
Intrapreneurship → Organizational Structure	0,359*	0,590	0,243	0,475	0,123	37,014*
Intrapreneurship → Organizational Structure → Process Innovation	0,539*	0,040	0,460	0,618	0,505	134,371*

* $p < 0,05$; Sobel $Z = 3,34$; $p < 0,05$

7. Discussion

The process of innovating in the service industry is more difficult than in the case of physical products due to their unique nature. The reasons for this difficulty are that they are produced and consumed simultaneously, their repetition is considered a new product or service, and they require the interaction of the provider and user. When such factors are assessed together, the continuous provision of the service at the same level of quality and satisfaction increases the significance of the determinants of innovation in this sector.

This study considered intrapreneurship as the determinant of process innovation and concluded that there is a positive relationship between intrapreneurship and process innovation. The results obtained support those of Gapp and Fisher (2007), Larsson (2010), Pearce and Carland (1996), and Lassen (2007). This study implies that intrapreneurship in the Turkish banking sector is the determinant of process innovation and that banks have a big advantage in realizing process innovation. Banks show that existing products and services improve their production and delivery processes, reduce costs, increase their quality and lifetime, provide the ability to meet more needs and provide higher satisfaction, and make them more flexible.

Another result is that the organizational structure has a partial mediating role in the decisiveness of intrapreneurship on innovation. Decentralized (or organic) structures, which provide the distribution of powers within the organization, information sharing and

communication within and outside the organization, have a higher positive impact on the decisiveness of innovation. Our results support the findings of Pinchot (1985), who argued that empowerment of the employees will enhance innovation trends, as well as the findings of Dewar and Dutton (1986), which concludes that structures that provide individuals with the autonomy to decide and act will increase innovation trends.

As the banking sector, like other service sectors, uses technological tools and systems very effectively, these tools can be thought to provide a proportional competitive advantage. However, having these tools alone does not mean much. The common use of technological tools and systems (such as ATM and POS Devices, programs) is allowed through bilateral and multilateral protocols. Having unique and original products and services offered with these tools and systems is what will ensure competitive advantage, for instance, providing services through it, such as the internet branch and loan usage, opening deposit accounts and approving all kinds of foreign currency transfer transactions, contracts, and commitments. The establishment of said services requires a combination of hundreds of things, such as efficient distribution of resources, working methods, procedures and processes, and entrepreneurial skills. However, the intensive use of technological tools brings important security risks along. Efforts to prevent such risks require significant resource allocation. Security endeavors may be considered as innovation efforts as well. In fact, banks that utilized technological tools

effectively in the presentation of their products and services during the pandemic, or that were able to develop products and services which could be offered through technological methods, were able to maintain their market shares and gain competitive advantage.

7.1. Theoretical Contributions

This empirical study in the banking (service) sector contributes to the literature in many ways. Services are a difficult area to investigate due to their unique structure and dependence on predominantly human-related factors (Evangelista et al., 1998). A clear consideration of different service features is imperative in creating a unique new service, which this study assists in doing.

The study also shows that intrapreneurship is an important determinant in creating process innovation. While the literature emphasizes the importance of factors such as coordination, initiative, and communication in ensuring that organizations are more customer-oriented and for them to achieve a competitive advantage (Lee et al., 2015), our study showed that organizational structure is functionally effective for employee creativity.

7.2. Managerial Implications

The most important factor that will ensure the success of managers, who are responsible for effectively achieving the goals and objectives of the organization, is their ability to encourage innovation. Managers should focus on strategic resources that enable innovation, especially internal resources such as intrapreneurship. These resources will provide many advantages such as capacity building, efficiency, and competitive advantage.

Innovation is a concrete concept, yet it changes and develops depending on the abilities of employees, organizational structure, and environmental factors. Due to the unique structure of the service sector, it is important that priority be given to the determinants of human-centered innovation, such as intrapreneurship. Managers are expected to identify the demands and expectations of customers and guide relevant change, such as developing products and services to meet them. In this regard, intrapreneurship is the most important determinant in developing new processes, using existing resources with new combinations to produce creative organizational knowledge and develop new operational capabilities (Zhang et al., 2017). From this viewpoint, it is recommended that managers first

make their businesses innovative, risk-taking, and proactive to successfully manage risky and uncertain innovation processes. Secondly, communication channels should be transformed into organic structures with an open, autonomous decision-making mechanism and flexible production processes. These can develop organizational abilities. We believe that best practices with new technology and market information will enable their businesses. It gives the ability to develop and maintain new processes.

These structures are necessary for the realization of change: they will provide an environment of cooperation and encourage them to take initiative and create creative solutions to problems. Otherwise, it will prevent intrapreneurship from displaying their talents, causing them to leave the organization. In contrast, as these processes created are resources that cannot be copied, they will provide a long-term competitive advantage.

7.3. Limitations and Future Research

This study was conducted within certain time and cost constraints. It was applied only to commercial bank employees in Turkey. Such gaps provide the most important resources for new research. It is important to conduct comparative studies on different functional departments of banks. For instance, conducting a comparative study on front line and marketing department employees, who establish a one-on-one relationship with the customer will have different results, in terms of the different details to be determined. In addition, it is important to repeat this study on the banking sector in different countries and to perform comparative studies.

The literature mostly focused on organizations, employees, or the service provided, and customers/users were largely ignored. However, it requires the interaction of the service provider and the service user. The active role and experience of the customer-user in developing the service are as important as other factors (Solomon et al., 1985). Direct involvement of all stakeholders in the innovation process is essential for effective, efficient, and sustainable success. We believe that involving customers in the process in new research and following holistic methods and procedures (Akamavi et al., 2001; Bitner et al., 1990) will achieve more effective results, improve existing models, and create alternative approaches.

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