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Designing an Optimal Model of Core Competencies for Employees in Public and Private Banks Using the Fuzzy Delphi Method

ABSTRACT

This study aimed to design an optimal core competency model for employees in public and private banks in Iran using a systematic qualitative methodology validated by expert consensus. The research employed a qualitative design utilizing thematic analysis and the fuzzy Delphi method to identify and validate core competency components. Data were collected through semi-structured interviews with eight selected experts, including bank managers and academic professionals, chosen based on their experience in human resources and organizational development. MAXQDA 2020 software was used to conduct thematic analysis of the interview transcripts, leading to the identification of initial themes and subthemes. These were subsequently evaluated through two rounds of fuzzy Delphi surveys to determine consensus levels using triangular fuzzy numbers and defuzzified means. The final model comprised 7 core competency dimensions and 24 subcomponents. The key dimensions included accountability, professional behavior, continuous learning, ethical standards, service orientation, effective communication, and job knowledge and skills. Among these, accountability (e.g., task responsibility, compliance, commitment) and continuous learning (e.g., in-service training, knowledge advancement) received the highest consensus scores. The results also indicated consistency across both Delphi rounds, confirming the robustness of the identified competency structure. Minor variations in mean values highlighted some refinement in expert agreement during the second round. The developed competency model offers a validated framework for enhancing employee performance and aligning human resource practices with strategic objectives in Iran's banking sector. It highlights the multidimensional nature of competencies, combining technical, behavioral, ethical, and cognitive skills. The model can serve as a foundation for recruitment, training, performance evaluation, and succession planning in both public and private banks, supporting sustainable organizational growth in an evolving financial environment.

Keywords: Core competencies, banking employees, public and private banks, thematic analysis, fuzzy Delphi method, human resource development, competency modeling.

Introduction

In the dynamic landscape of the banking industry, organizational performance is increasingly influenced by the quality and depth of employee competencies. Public and private banks face a heightened demand to align human resource capabilities with evolving market expectations, technological advancements, and regulatory frameworks. Core competencies, defined as the unique combination of skills, knowledge, and behaviors that contribute to superior performance, have emerged as strategic assets that underpin organizational success in highly competitive sectors such as banking [1, 2]. In this context, designing an optimal model for core competencies of bank employees is not only a response to the pressing need for improved service quality and innovation, but also a pathway toward building sustainable competitive advantage [3].

The development of competency-based frameworks in banking institutions reflects a broader global trend where organizations seek to redefine job roles in terms of measurable competencies rather than mere tasks or responsibilities [4]. Competency modeling enables the alignment of workforce capabilities with strategic objectives, ensuring that human resources contribute meaningfully to organizational transformation [5]. In this regard, both public and private banks must integrate core competency models that support employee development, performance evaluation, and succession planning, particularly in response to technological disruptions and regulatory changes [6, 7].

The literature affirms that core competencies function as a foundation for adaptive performance in complex environments [8, 9]. They enable employees to respond effectively to customer needs, embrace digital banking innovations, and navigate the challenges of financial risk, data security, and compliance [10, 11]. Accordingly, human capital development anchored in core competencies contributes to enhanced productivity, service excellence, and organizational resilience [12, 13]. This reinforces the necessity of competency modeling as a managerial tool for workforce optimization and strategic HR planning [14, 15].

Despite growing recognition of the strategic value of competencies, research in Iran's banking system—particularly in formulating competency models tailored to both public and private institutions—remains limited. Previous studies often focused on general human resource management or training frameworks without providing a structured, validated model of competencies specific to bank employees [16, 17]. In contrast, international research has advanced various models aimed at delineating the behavioral and technical competencies necessary for excellence in finance and service delivery [18, 19]. This study addresses this gap by systematically identifying and validating core competencies using a qualitative approach grounded in expert interviews and confirmed through the fuzzy Delphi method.

Competency frameworks are particularly vital in banking due to the industry's reliance on trust, compliance, and continuous innovation. The increasing integration of digital platforms and fintech solutions requires bank employees to possess not only traditional technical expertise but also capabilities in customer relationship management, ethical decision-making, and adaptive learning [6, 20]. Moreover, the transformation of work processes driven by automation and artificial intelligence has elevated the importance of behavioral competencies such as accountability, communication, and collaboration [21, 22]. As a result, competency models must encompass a diverse array of dimensions to remain relevant in fast-evolving contexts.

In recent years, scholars have emphasized the role of competency-based systems in enhancing employee engagement and performance. For instance, integrating competency models into training and development programs has been shown to improve skill acquisition and alignment with organizational goals [23]. Similarly, competency frameworks contribute to more precise recruitment and performance appraisal practices, reducing misalignment between individual capabilities and job demands [24]. In public banking institutions, where bureaucratic structures often hinder agility, competency modeling offers a mechanism for revitalizing human capital strategy and fostering a performance-oriented culture [25, 26].

The theoretical underpinning of this study draws from both classical and contemporary perspectives on competencies. Prahalad and Hamel's theory of core competencies highlights the integrative value of distinctive capabilities that offer access to markets and contribute to customer benefits [1]. Contemporary interpretations emphasize the dynamic and contextual nature of competencies, aligning them with organizational strategy and environmental demands [27, 28]. From a practical standpoint, competencies are not merely innate traits but are developed through structured learning and reflective practice

[5, 12]. Hence, competency modeling must consider both input (knowledge and skills) and output (behaviors and outcomes) dimensions.

Furthermore, the integration of core competencies into HR systems is essential for fostering innovation, particularly in the service-intensive domain of banking. Employees equipped with a competency mindset are more likely to engage in continuous improvement, problem-solving, and cross-functional collaboration [17, 29]. These traits are instrumental in achieving customer satisfaction, managing organizational change, and sustaining performance in the face of uncertainty. Therefore, competency frameworks act as enablers of organizational learning and transformation [3, 7].

To develop an effective core competency model, this study employed a thematic analysis to explore expert perspectives and applied the fuzzy Delphi method to validate the components and subcomponents of the model. The fuzzy Delphi technique offers a structured, consensus-driven process for aggregating expert opinions, particularly in contexts where data uncertainty and subjective judgment are prominent [18]. By engaging with HR managers, university scholars, and industry professionals, this study ensures the identified competencies reflect both practical relevance and academic rigor.

The outcome of this methodological approach is a multi-dimensional framework encompassing key domains such as accountability, professional behavior, continuous learning, ethical standards, service orientation, effective communication, and job-related knowledge and skills. These dimensions are not only reflective of the banking sector's operational needs but also aligned with global competency standards in human capital development [8, 20, 21]. The inclusion of ethical conduct, communication efficiency, and learning agility underscores the holistic nature of modern competency requirements [4, 11, 13].

Finally, this study contributes to the growing body of literature on competency-based human resource management in the Middle East, providing a validated framework that can be adopted by banks seeking to elevate employee performance and strategic alignment.

Methods and Materials

Since this study aims to design an optimal model of core competencies for employees in public and private banks, its primary objective is to identify the key components of core competencies. This research adopts a qualitative approach with a systematic strategy based on expert interviews and the formation of a focus group. The statistical population consists of 8 individuals, including managers and experts from public and private banks as well as academic experts: 2 with master's degrees, 3 doctoral candidates, and 3 with PhDs. The main criteria for selecting these individuals were their managerial, educational, and research experience in the field of human resources, as well as their membership in university faculties or research centers. Additionally, their selection was based on their active involvement in educational and research activities concerning core competencies and their motivation to contribute to modeling in this area. These individuals were employed in the provinces of Ilam, Fars, Isfahan, and Tehran and were selected using a cluster sampling method.

In this study, two data collection methods were used: library research and semi-structured interviews. The library method was employed to gather theoretical concepts and literature to develop the theoretical framework and research background, while semi-structured interviews were conducted with academic experts for qualitative data collection. Each interview lasted between 60 to 90 minutes. Notes were taken during the interviews, and—with the participants' consent and adherence to

ethical standards—the conversations were recorded to allow for repeated review and more accurate analysis of the interviewees' viewpoints. The interview questions were structured as follows:

(a) In your opinion, what are the core competencies of employees?

(b) To what extent do you think senior bank managers support employees' core competencies?

In the present study, thematic analysis was employed as a qualitative method to analyze textual data, with its main characteristic being the identification of recurring and distinct patterns in speech and text. The thematic analysis process followed six stages: familiarization with data, theme identification, thematic network construction, thematic network analysis, and report writing.

In the first step, all interviewees' viewpoints were documented and recorded during the interviews. Their perspectives, along with the researcher's observations and interpretations, were transcribed. Upon reaching theoretical saturation in the responses, the initial data were imported into MAXQDA software, where the first-round codes were generated. Then, second-level coding was applied, and after determining the categories, the core themes of the theory were identified in the next stage. It is important to note that in the model design, the components must first be identified, the relationships among them explained, and finally, the rationale behind the selection of these components and their interrelations clarified. In the second step, based on the collected data, the implementation components of the intended system are presented.

After completing the above process, the Fuzzy Delphi technique was employed to evaluate the previously identified factors based on expert opinions using linguistic variables in a five-point Likert scale (Strongly Agree, Agree, Somewhat Agree, Disagree, Strongly Disagree). Subsequently, the linguistic variables were converted into triangular fuzzy numbers and defuzzified using fuzzy averaging. The resulting average reflects the degree of expert agreement with each component of the research model. For the fuzzification of expert opinions, fuzzy numbers were utilized. In this context, fuzzy numbers are fuzzy sets defined in conjunction with numerical data to address uncertainty regarding a phenomenon.

Findings and Results

This section begins with an examination of the responses provided to the first research question. Initially, the dimensions and key components are identified, and in the following part, the indicators corresponding to each component are categorized. The identification and determination of components involve several key steps: in the first step, through repeated readings of the texts and a back-and-forth movement between the content gathered from the interview transcripts, efforts were made to achieve a sound understanding of the themes and theoretical literature of the subject and to ensure high consistency among the texts.

In the second step, sub-themes were generated from the data, in which each sub-theme represented a meaningful and significant feature of the data. In the third step, various sub-themes were grouped and the coded summaries of the themes were organized. In effect, the sub-theme analysis began, and efforts were made to determine how various sub-themes could be combined to form a main theme.

The fourth step consisted of two parts: reviewing and refining the themes. First, the summaries of the themes were reviewed, and then the validity of the themes in relation to the entire dataset was assessed. In the fifth step, the themes were defined and named—this step began when a satisfactory thematic pattern was reached. Finally, in the sixth step, a report of the previous steps was prepared. The results of the above process are presented in Table 1.

Table 1

Main and Sub-Themes for the Core Competency Model of Employees in Public and Private Banks

Main Theme	Sub-Theme	Participant Codes and Extracted Statements
Accountability	Responsibility toward assigned tasks	P1 Code 2: Accepting responsibility for services provided to clients; P2 Code 1: Accepting responsibility for assigned duties
	Adherence to rules and regulations	P1 Code 1: Implementing issued directives; P4 Code 2: Established procedures lead to administrative and financial discipline
	Commitment to fulfilling duties	P3 Code 6: Commitment to assigned tasks; P3 Code 4: Obligation to perform a set of duties
	Task-related self-awareness	P5 Code 6: Employees' awareness of their strengths and weaknesses in performing tasks; P3 Code 7: Understanding and mastery of job nature
Professional Behavior	Neutrality (independence)	P6 Code 3: Not involving personal preferences in banking activities; P4 Code 8: Overcoming emotions and personal beliefs
	Self-control	P5 Code 5: Performing duties by regulation even in the absence of supervision; P7 Code 4: Not being influenced by others
Continuous Learning	In-service training	P3 Code 6: Programs designed for more effective execution of tasks
	Development of current knowledge	P1 Code 6: Includes training sessions aimed at preparing employees
	Acquisition of new technical knowledge	P5 Code 7: Knowledge and skills that enhance employee capabilities
Ethical Standards	Commitment to individual ethics	P4 Code 6: Having honesty and human dignity; P6 Code 4: Loyalty to bank goals; P8 Code 4: Receptiveness to feedback
	Commitment to organizational ethics	P7 Code 3: Obligation to observe bank norms and values; P8 Code 2: Adhering to principles and standards of the bank
Service Orientation	Trustworthiness in service delivery	P4 Code 4: Protecting bank and client information; P2 Code 5: Avoiding misconduct that would harm the bank's image
	Transparent service delivery	P5 Code 5: Supporting bank services; P3 Code 8: Eliminating ambiguity in service provision
	Timely service provision	P1 Code 6: Striving to deliver online services; P8 Code 3: Serving clients within a short time frame
	Meeting client expectations	P5 Code 8: Striving to meet customer demands; P4 Code 7: Addressing financial needs through loans and facilities
Effective Communication (with clients and colleagues)	Client communication	P6 Code 6: Promoting bank effectiveness and support for clients; P3 Code 6: Social media marketing for diverse services
	Resource and capital attraction	P5 Code 5: Striving to attract public deposits; P6 Code 7: Adequate capital enables the bank to expand its programs
	Gaining client trust	P4 Code 6: Positive client attitudes increase bank credibility; P4 Code 4: Client belief in services as intangible capital
	Team participation	P3 Code 3: Group work fosters a sense of belonging; P5 Code 6: Teamwork enhances employee competitiveness
	Constructive interaction with colleagues	P8 Code 8: Communication reduces work pressure; P8 Code 5: Friendly relationships foster mutual understanding
	Conflict resolution among colleagues	P7 Code 6: Conflicts may lead to destructive informal groups; P2 Code 8: Misbehavior or misinterpretation may create unexpected challenges
	Alignment with organizational values	P6 Code 8: Employees prioritize bank's excellence values over personal ones and aim to align with them
Job Knowledge and Skills	Task-related expertise	P7 Code 7: Individual competence in assigned roles; P7 Code 5: Completing professional training for better performance
	Problem-solving skills	P8 Code 7: Offering practical solutions for bank problems; P7 Code 1: Focusing on and addressing issues

After achieving theoretical saturation of the texts, the thematic analysis was completed. Subsequently, the qualitative data processes and text analysis were conducted using MAXQDA 2020 software.

In the next phase, to identify the components of the employee core competency model, the Fuzzy Delphi method was employed in two rounds using expert opinions. As a result, 7 components and 24 indicators were identified and distributed among the experts. In the first round of the expert survey, a detailed description of the components and indicators was sent to the experts so their agreement or disagreement with each item could be evaluated. The results obtained from expert responses and the triangular fuzzy mean and defuzzified mean are presented below.

Table 2

Mean of Experts' Views in the First Round of Delphi Survey

No.	Components	Triangular Fuzzy Mean	Defuzzified Mean
1	Accountability for duties	0.778 / 0.161 / 0.123	0.821
2	Strict adherence to laws and regulations	0.853 / 0.179 / 0.097	0.814
3	Commitment to task completion	0.912 / 0.198 / 0.082	0.811
4	Task-related self-awareness	0.862 / 0.221 / 0.028	0.803

5	Neutrality (independence)	0.867 / 0.218 / 0.045	0.802
6	Self-control	0.878 / 0.223 / 0.039	0.793
7	In-service training	0.759 / 0.176 / 0.123	0.803
8	Enhancing current knowledge	0.811 / 0.197 / 0.098	0.801
9	Acquiring new technical knowledge	0.837 / 0.217 / 0.087	0.812
10	Adherence to personal ethics	0.815 / 0.212 / 0.098	0.782
11	Adherence to organizational ethics	0.8469 / 0.216 / 0.064	0.798
12	Trustworthiness in service delivery	0.789 / 0.183 / 0.082	0.795
13	Transparent service delivery	0.792 / 0.189 / 0.093	0.807
14	Timely service provision	0.787 / 0.191 / 0.085	0.792
15	Meeting customer expectations	0.782 / 0.188 / 0.084	0.811
16	Customer communication	0.869 / 0.211 / 0.062	0.782
17	Resource and capital attraction	0.871 / 0.221 / 0.042	0.793
18	Gaining customer trust	0.769 / 0.187 / 0.108	0.791
19	Participation in team activities	0.753 / 0.169 / 0.106	0.764
20	Constructive interaction with colleagues	0.816 / 0.192 / 0.081	0.725
21	Conflict resolution among colleagues	0.713 / 0.194 / 0.109	0.759
22	Alignment with organizational values	0.774 / 0.218 / 0.087	0.814
23	Task-related expertise	0.776 / 0.187 / 0.085	0.793
24	Problem-solving skills	0.848 / 0.216 / 0.068	0.751

Table 3

Average of Experts' Views in the First Delphi Survey Round

Component	Defuzzified Mean
Accountability	0.812
Professional Behavior	0.797
Continuous Learning	0.805
Ethical Standards	0.790
Service Orientation	0.801
Effective Communication	0.775
Job Knowledge and Skills	0.772

In the second round, similar to the first, all questions were answered, and the results derived from the triangular fuzzy mean and defuzzified mean—as well as the mean of expert opinions from the second survey round—are presented below.

Table 4

Mean of Experts' Views in the Second Round of Delphi Survey

No.	Components	Triangular Fuzzy Mean	Defuzzified Mean
1	Accountability for duties	0.768 / 0.158 / 0.119	0.811
2	Strict adherence to laws and regulations	0.805 / 0.172 / 0.101	0.806
3	Commitment to task completion	0.755 / 0.192 / 0.068	0.801
4	Task-related self-awareness	0.890 / 0.215 / 0.034	0.794
5	Neutrality (independence)	0.875 / 0.203 / 0.052	0.791
6	Self-control	0.902 / 0.214 / 0.034	0.785
7	In-service training	0.767 / 0.156 / 0.121	0.779
8	Enhancing current knowledge	0.825 / 0.183 / 0.081	0.795
9	Acquiring new technical knowledge	0.852 / 0.194 / 0.067	0.806
10	Adherence to personal ethics	0.851 / 0.196 / 0.068	0.761
11	Adherence to organizational ethics	0.879 / 0.202 / 0.054	0.784
12	Trustworthiness in service delivery	0.807 / 0.174 / 0.097	0.768
13	Transparent service delivery	0.806 / 0.179 / 0.079	0.797
14	Timely service provision	0.805 / 0.177 / 0.082	0.782
15	Meeting customer expectations	0.804 / 0.175 / 0.083	0.805
16	Customer communication	0.882 / 0.201 / 0.059	0.746
17	Resource and capital attraction	0.887 / 0.221 / 0.049	0.784
18	Gaining customer trust	0.786 / 0.161 / 0.114	0.781
19	Participation in team activities	0.762 / 0.154 / 0.116	0.759
20	Constructive interaction with colleagues	0.830 / 0.178 / 0.077	0.714
21	Conflict resolution among colleagues	0.724 / 0.176 / 0.116	0.742
22	Alignment with organizational values	0.792 / 0.213 / 0.081	0.801
23	Task-related expertise	0.798 / 0.172 / 0.096	0.776
24	Problem-solving skills	0.879 / 0.204 / 0.051	0.743

Table 5

Average of Experts' Views in the Second Delphi Survey Round

Component	Defuzzified Mean
Accountability	0.803
Professional Behavior	0.788
Continuous Learning	0.793
Ethical Standards	0.772
Service Orientation	0.788
Effective Communication	0.761
Job Knowledge and Skills	0.759

Finally, the results from the first and second rounds of the Delphi survey were compared, and the degree of difference between them is presented below.

Table 6

Differences in Defuzzified Means Between First and Second Rounds of Expert Surveys

No.	Indicator	First Round	Second Round	Difference
1	Accountability for duties	0.821	0.811	0.010
2	Strict adherence to rules	0.814	0.806	0.008
3	Commitment to tasks	0.811	0.801	0.009
4	Task-related self-awareness	0.803	0.794	0.009
5	Neutrality (independence)	0.802	0.791	0.011
6	Self-control	0.793	0.785	0.008
7	In-service training	0.803	0.779	0.024
8	Enhancing current knowledge	0.801	0.795	0.006
9	Acquiring new technical knowledge	0.812	0.806	0.006
10	Personal ethics adherence	0.782	0.761	0.021
11	Organizational ethics adherence	0.798	0.784	0.014
12	Trustworthiness in service	0.795	0.768	0.027
13	Transparent service delivery	0.807	0.797	0.010
14	Timely service	0.792	0.782	0.010
15	Meeting customer expectations	0.811	0.805	0.006
16	Customer communication	0.782	0.746	0.036
17	Capital attraction	0.793	0.784	0.009
18	Customer trust	0.791	0.781	0.010
19	Team participation	0.764	0.759	0.005
20	Peer interaction	0.725	0.714	0.011
21	Conflict resolution	0.759	0.742	0.017
22	Alignment with organizational values	0.814	0.801	0.013
23	Task expertise	0.793	0.776	0.017
24	Problem-solving	0.751	0.743	0.008

Table 7

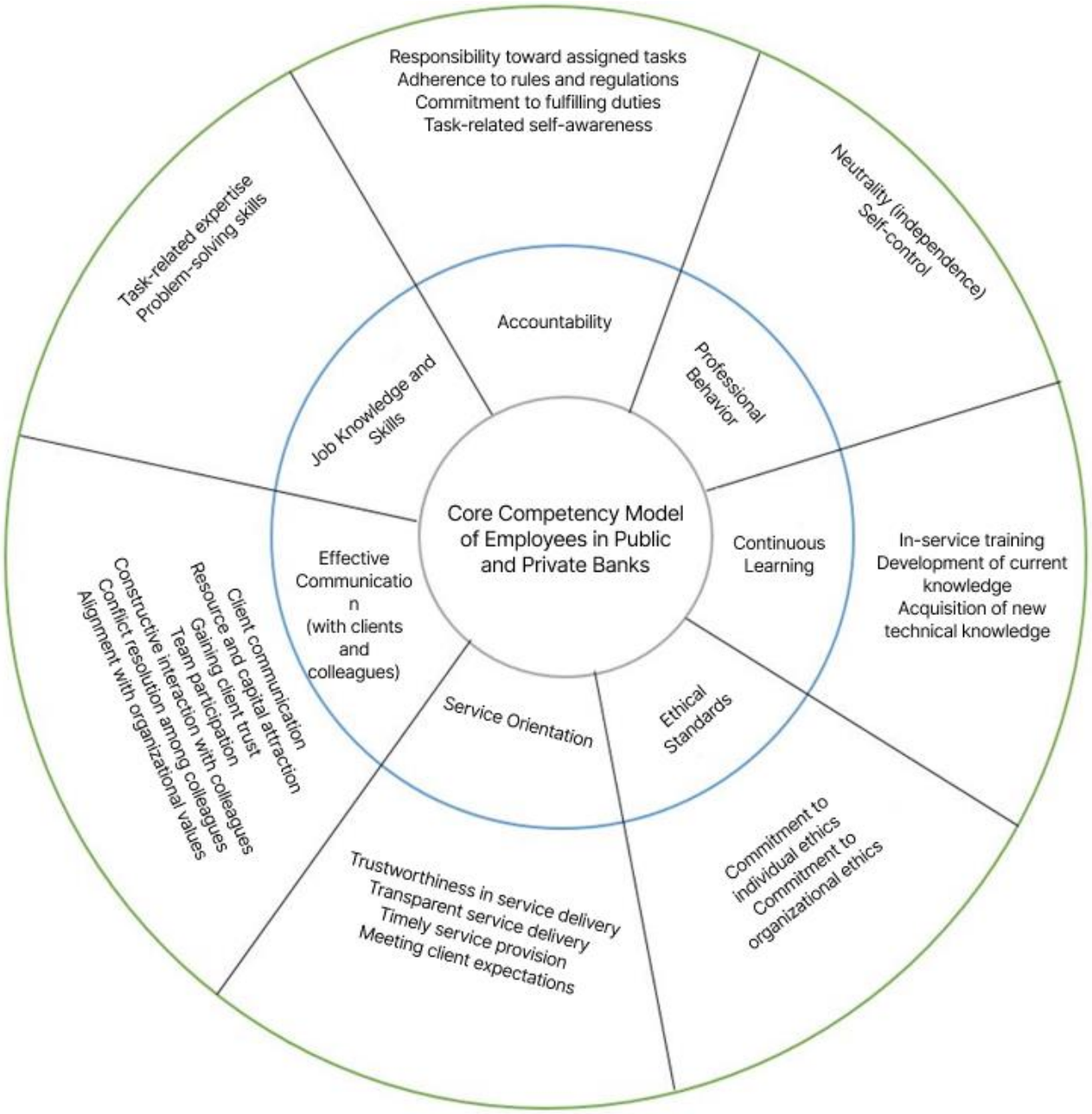
Differences in Component Means Between Rounds

Component	First Round	Second Round
Accountability	0.812	0.803
Professional Behavior	0.797	0.788
Continuous Learning	0.805	0.793
Ethical Standards	0.790	0.772
Service Orientation	0.801	0.788
Effective Communication	0.775	0.761
Job Knowledge and Skills	0.772	0.759

Ultimately, based on the results obtained, the conceptual model of the study can be illustrated in Figure 1:

Figure 1

The Core Competency Model for Employees in Public and Private Banks



Discussion and Conclusion

The findings of this study led to the development of a comprehensive core competency model for employees in Iran's public and private banking sectors. Using thematic analysis followed by the fuzzy Delphi method, seven key dimensions and 24 subcomponents were identified and validated. The dimensions include: *accountability*, *professional behavior*, *continuous learning*, *ethical standards*, *service orientation*, *effective communication*, and *job knowledge and skills*. The iterative Delphi process confirmed the relevance and priority of each dimension through consensus among academic and industry experts. These results reflect the necessity for an integrated competency framework that aligns employee attributes with the operational and strategic goals of modern banking institutions.

One of the most significant outcomes of the study is the prioritization of accountability-related competencies such as responsibility for assigned tasks, adherence to regulations, and awareness of job duties. These subcomponents received the highest defuzzified means across both Delphi rounds, indicating strong expert agreement. This result echoes findings from earlier research emphasizing that accountability is a foundational competency in service-oriented organizations such as banks [4, 18]. Particularly in high-regulation environments, the ability of employees to operate with a clear sense of responsibility and compliance is indispensable to ensure organizational legitimacy and client trust [11, 24].

Similarly, the dimension of professional behavior—comprising neutrality and self-control—was strongly supported by participants. These competencies underscore the importance of emotional regulation and impartiality in customer interactions and decision-making, especially within the often politically or socially sensitive context of public banking. These findings are consistent with [21], who argued that behavioral competencies significantly influence organizational effectiveness. Furthermore, in line with [5], professional behavior acts as a behavioral anchor, supporting consistency and reliability in performance evaluations and leadership development.

Another prominent finding is the emphasis on continuous learning, encompassing in-service training, enhancement of existing knowledge, and acquisition of new technical expertise. This highlights the critical role of learning agility in the financial sector, which must constantly adapt to digital transformation and regulatory evolution. As demonstrated by [20], the rapid digitization of banking services has created a competency gap, necessitating the upskilling and reskilling of employees. The need for continuous learning is further reinforced by [8], who posits that megaprojects and cross-functional teams demand dynamic learning capabilities to achieve efficiency and sustainability.

The ethical standards dimension—including personal and organizational ethics—also emerged as central. The importance of ethics in financial services cannot be overstated, given that trust and integrity form the backbone of client relationships. This result aligns with [3] who found that ethical conduct is directly linked to sustainable competitive advantage in banking. Similarly, [9] emphasized that ethics-based competency models reduce reputational risk and foster organizational credibility. Ethical conduct is not only a moral obligation but a functional necessity in banking institutions that handle sensitive financial data and must maintain transparency in their dealings.

The service orientation dimension includes competencies such as trustworthiness in service provision, transparency, timeliness, and responsiveness to customer needs. The high consensus on these competencies reflects the shift in banking toward client-centric strategies. [29] previously demonstrated that core competencies in customer service significantly impact consumer behavioral outcomes. Additionally, [6] showed that service innovation, facilitated by competency-based HR practices, contributes to firm growth in the banking sector. These findings support the argument that service orientation should be institutionalized through structured competency models to enhance customer loyalty and market differentiation.

Another noteworthy dimension is effective communication, which encompasses not only direct interaction with clients but also internal team dynamics such as collaboration, conflict resolution, and alignment with organizational values. This multi-faceted approach to communication reflects the interdependence between internal cohesion and external service quality. Previous studies, such as those by [13] and [25], have found that collaborative behavior and interpersonal competencies play a mediating role in employee satisfaction and organizational climate. Moreover, [7] showed that knowledge sharing and communication effectiveness are key mediators between entrepreneurial orientation and organizational performance.

Finally, the dimension of job knowledge and skills—comprising job-specific expertise and problem-solving abilities—was also validated with strong consensus. These technical competencies are the core engine of employee performance and serve as prerequisites for higher-order behaviors such as innovation and strategic thinking. The emphasis on specialized knowledge mirrors the competency models presented by [2] and [23], both of whom advocated for a balance between tacit and explicit knowledge in competency-based talent development. In Iran's banking sector, where operational complexity intersects with regulatory scrutiny, these competencies are particularly critical.

The triangulation of qualitative thematic analysis and quantitative fuzzy Delphi validation provides a robust methodological foundation for the model. The study confirms that competency development must be multidimensional and context-sensitive, reflecting not only task-oriented skills but also interpersonal, cognitive, and ethical capabilities. This integrated model aligns with the frameworks proposed by [1] and [12], which consider core competencies as a combination of knowledge, behavior, and values that yield strategic advantages when embedded across organizational systems.

This study, while comprehensive in scope and rigorous in methodology, is not without limitations. First, the sample size of experts in the Delphi process was relatively small (n=8), albeit purposefully selected for their subject-matter expertise. While this aligns with accepted qualitative standards for Delphi studies, the limited number restricts the generalizability of findings to broader populations. Second, the study was geographically confined to four provinces in Iran, which may not capture regional or institutional variations in competency priorities across the entire national banking sector. Additionally, the exclusive reliance on expert opinions may have introduced cognitive biases, particularly given the hierarchical nature of the banking system where senior professionals dominate decision-making structures. Lastly, although the fuzzy Delphi method effectively captures consensus, it may mask the richness of dissenting views or emerging competencies not yet widely recognized.

Future research should consider expanding the geographic and institutional diversity of participants, including mid-level employees and frontline staff whose experiences may reveal different or emergent competency needs. A longitudinal approach could also be valuable in assessing how competency priorities evolve in response to technological change, regulatory updates, or shifts in customer expectations. Furthermore, quantitative validation through structural equation modeling (SEM) or confirmatory factor analysis (CFA) can provide empirical rigor to the model and facilitate comparative studies across countries or banking systems. Researchers might also explore the relationship between competency levels and key performance indicators such as employee engagement, customer retention, or operational efficiency to further establish causal linkages. Lastly, comparative studies between public and private banks could yield insights into how organizational structure mediates competency effectiveness.

Banking institutions, both public and private, should institutionalize the identified core competencies within their human resource systems. This includes integrating the model into recruitment, performance appraisal, promotion, and training programs. HR managers can use the framework to design competency-based learning pathways and professional development initiatives tailored to job roles and career stages. Leadership development programs should emphasize behavioral and ethical competencies alongside technical skills to cultivate well-rounded future leaders. Moreover, aligning competencies with organizational goals can improve strategic clarity and operational coherence. Finally, banks should invest in digital platforms for ongoing competency assessment and feedback, ensuring agility in adapting to emerging workforce needs and maintaining competitiveness in a rapidly transforming industry.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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