

Innovations

Value Co-Creation and Service Innovation of Deposit Money Banks in North Central, Nigeria

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Abstract: Customer (user) involvement in creating value has become increasingly important globally due to its impact on unlocking new sources of competitive advantage. However, the majority of research on value co-creation and its impact on service innovation consists of systematic reviews and conceptual clarifications from other sectors, such as tourism and healthcare, accompanied by inconsistencies in findings. This highlights a gap that necessitates empirical investigation, particularly as there are few empirical studies focused on the banking sector (Deposit Money Banks) in Nigeria. Therefore, this study aimed to investigate value co-creation and service innovation of Deposit Money Banks in North Central, Nigeria. The study adopted a survey design. The population comprised 817 banks in North Central, Nigeria, and the sample size was 269. Stratified and simple random sampling techniques were applied. Descriptive statistics were used for data analysis, while Structural Equation Modeling (SEM) tested the hypotheses with the aid of SPSS AMOS. The results revealed that Access ($\beta = 0.205$, $p < .001$) and Flexibility ($\beta = 0.405$, $p < .001$) have positive significant effects on new service concepts, while Dialogue ($\beta = 0.039$, $p = .493$) has no significant effect on new service concepts. The results also confirm that Access ($\beta = 0.384$, $p < .001$) and Dialogue ($\beta = 0.167$, $p = .004$) have positive significant effects on the new customer-firm interface, while Flexibility ($\beta = 0.072$, $p = .226$) does not have a positive significant effect on the new customer-firm interface. Lastly, the results revealed that Access ($\beta = 0.451$, $p < .001$) and Flexibility ($\beta = 0.158$, $p = .006$) have positive significant effects on the new value system, whereas Dialogue ($\beta = 0.057$, $p = .311$) does not have a positive significant effect on the new value system. The study suggests that organizations should prioritize access as a fundamental enabler of innovation, customer relationships, and value creation. Additionally, organizations should develop flexible business models by implementing agile service structures that can quickly adapt to changing customer needs.

Keywords: Value Co-creation, Service Innovation, Dialogue, Access, Flexibility, New service concept, New customer-firm interface, New value system

Introduction

Value co-creation (VCc) has gained considerable attention in the marketing and service management literature; yet, empirical research examining its role in service innovation within the banking sector, particularly in developing countries, remains limited. Despite the global emphasis on value co-creation as a driver of innovation, most existing studies tend to focus on theoretical development or rely on data from developed economies, which may not translate well into the context of emerging markets. Consequently, our understanding of how VCc contributes to service innovation in regions with varying economic, technological, and customer engagement dynamics is still underdeveloped. This gap highlights the need for more context-specific research that investigates VCc through empirical evidence, especially in sectors like banking, where service delivery and customer interaction are undergoing rapid transformation.

Previous studies exploring value co-creation, such as Tran et al. (2025) and Taghizadeh et al. (2022), have researched value co-creation and service innovation with limited focus on the DART model (Dialogue, Access, Risk assessment, Transparency) and Den Hertog et al. (2010) service innovation model, particularly in the banking sector from a developing country perspective. Therefore, this study seeks to address that gap by exploring the role of value co-creation in driving service innovation within Deposit Money Banks in a developing region. Specifically, it focuses on three core components of VCc: Dialogue, Access, and Flexibility, as lenses through which to analyze the contribution of customer-firm interactions to service development. By grounding the research in the context of developing economies, the study aims to offer more inclusive insights into VCc's influence on service innovation, providing a valuable addition to the theoretical and practical discourse in service management.

Over the past twenty years, the concept of Value Co-creation (VCc) has truly taken center stage, marking a significant shift from a focus on products to a more service-oriented mindset. Instead of viewing customers as merely passive recipients of value, the VCc approach encourages them to be active partners in the process. According to the Service-Dominant Logic framework introduced by Vargo and Lusch in 2004, customers play a crucial role in co-creating value through their interactions with companies and other stakeholders, which enhances the overall service experience. This shift has major implications not only for customer satisfaction and loyalty, as noted by Yen et al. (2020) and Mathis et al. (2016), but also for internal dynamics like employee performance and organizational innovation.

Prahalad and Ramaswamy, pioneers of the VCc concept since 2004, emphasized the importance of consumers taking an active role. They introduced the DART model (Dialogue, Access to information, Risk assessment, and Transparency) as key elements for successful value co-creation. Although several theoretical frameworks

have emerged, such as the one by Ranjan and Read in 2016, recent studies still indicate inconsistencies in clearly defining VCc within structured frameworks, as noted by Saha et al. (2022). This research focuses on Dialogue, Access, and Flexibility to shed more light on these concepts, particularly in practical contexts like the banking sector.

In today's experience-driven economy, service providers are starting to see the real value in getting customers involved in how services are designed and delivered. Skalen et al. (2021) point out that VCc marks a significant change in how organizations think about value, focusing more on collaboration than just transactions. This spirit of teamwork helps companies spot unmet needs, come up with fresh ideas, and create services that truly connect with users. In the banking world, VCc is crucial for enhancing service innovation (Hajar et al., 2021; Malar et al., 2019). With technology evolving rapidly and customer expectations changing (Zhang et al., 2020), banks are now working alongside customers to develop services through digital platforms, tailored offerings, and feedback loops. By doing this, banks can better align their services with what customers want, leading to higher satisfaction, loyalty, and a competitive edge (Rajagopal & Rajagopal, 2010; Aouad & Aboueljaouad, 2019). On the side of service innovation, Den Hertog (2000); Den Hertog et al. (2010) and Meigounpoory et al. (2015) innovation framework highlights the complex nature of service innovation, which relates to new service concept, new customer-firm interface, new organizational service delivery system, new technological service delivery system, and new value system/business partners. This study focused on new service concept, new customer-firm interface, and new value system.

As global competition intensifies and consumer preferences shift, service providers are finding it more important than ever to engage customers at every step of new service development (Saha et al., 2022; Loureiro et al., 2020; Zaborek & Mazur, 2019). However, relying too heavily on insights from developed economies can limit the applicability of these findings elsewhere. Research like that of Dos Santos et al. (2022) warns against using Western-centric models in different contexts without making necessary adjustments. This highlights the importance of understanding how value co-creation (VCc) plays out in emerging markets, where customer behaviors, infrastructure challenges, and institutional frameworks can vary significantly. Ultimately, this research seeks to close the gap by exploring how VCc impacts service innovation in Deposit Money Banks in North Central Nigeria, aiming to enhance both academic knowledge and provide practical insights for professionals navigating these complex service landscapes.

Literature review

Value Co-creation

The idea of Value Co-creation (VCC) springs from S-D logic, suggesting that in a service ecosystem, customers and businesses work together to create value (Saha et al., 2020; Delpechitre et al., 2018). Vargo and Lusch (2016) laid out the Foundational Premises of their theory, which claims that service is the core of exchange; value is co-created by various participants, including the beneficiary; all economic and social players act as resource integrators; and value is always determined by the beneficiary's experience. These ideas have been frequently revisited and refined in the literature, as shown by Vargo & Lusch (2016), Leclercq et al. (2020), and Beirao et al. (2021).

The idea of value co-creation has gradually become a recognized approach, fueled by increasing interest from both professionals and academics around the globe in the twenty-first century. Vargo and Lusch have played a crucial role in spreading, expanding, and analyzing the idea of value co-creation, skillfully weaving in insights from other researchers into their theoretical framework (Berenguer-Contrí et al., 2020). The value co-creation concept has spread across various fields and contexts, leading to its wider acceptance in the business world, where many companies are using it to boost efficiency and build strong relationships with their clients. However, as the VCC idea has been applied in different areas, it has led to a variety of interpretations. In the consumer-to-business (C2B) space, the main players in the value co-creation (VCC) process usually include the company and its customers. On the other hand, in the business-to-business (B2B) realm, the VCC process often involves additional players like suppliers alongside the company and its clients (Kohtamäki and Rajala, 2016; Breidbach and Maglio, 2016). Therefore, even with the growing research on VCC and its uses across various sectors, it is crucial to conduct a comprehensive review of the existing literature on VCC to create a unified understanding for broader implementation. In this study, value co-creation is defined as the process where multiple stakeholders like customers, suppliers, and organizations come together to actively create value for mutual benefits.

The DART model, put forth by Prahalad and Ramaswamy in 2004, outlines four key elements of value co-creation: Dialogue (think interactivity and engagement), Access (the sharing of information and knowledge), Risk assessment (providing the info needed for smart decision-making), and Transparency (being open and honest). Since this model was first introduced, these components have been thoroughly explored in various studies. Also, further research like Omar et al (2012) identified flexibility and compatibility as a construct of Value co-creation. This research specifically looked at the Dialogue, Access and flexibility elements of value co-creation, which are seen as foundational to the whole process. This aspect highlights the importance of having a continuous and meaningful interaction between

organizations and their customers. It is all about getting customers involved in a two-way communication process, really listening to their needs, and weaving their feedback into the value creation journey (Hsieh & Hsu, 2021).

Dialogue

Dialogue is a fundamental yet intricate aspect of value co-creation, often praised for its ability to nurture mutual understanding and shared meaning among stakeholders. The Dialogic Engagement (DE) framework suggests that true dialogue, marked by mutual respect, openness, and reflexivity, is vital for co-creating value (Keeling et al., 2020). DE highlights that through dialogue, stakeholders can share knowledge and create common meanings, which are essential for collaborative decision-making. Yet, reaching this ideal form of dialogue is no easy feat, as it involves navigating tensions and ensuring everyone has a fair chance to participate. Additionally, the DART model (Dialogue, Access, Risk assessment, Transparency) emphasizes the importance of dialogue in value co-creation (Otchere et al., 2019). Research shows that the quality of dialogue plays a significant role in the outcomes of value co-creation. For example, in healthcare settings, effective communication between patients and providers can lead to better treatment decisions and improved health outcomes (Keeling et al., 2020). On the other hand, poor dialogue can lead to misunderstandings and a loss of trust.

Access

The access dimension is all about giving customers the tools, information, and resources they need to actively participate in creating value with the organization. It is about breaking down barriers and encouraging customer interaction and value co-creation at various touch points (Prahalad & Ramaswamy, 2004). Having access to information is crucial for value co-creation because it empowers customers to make well-informed choices about the services they use. In the banking industry, for instance, offering comprehensive, real-time information helps customers grasp the full range of products and services available to them. This not only boosts customer satisfaction but also allows banks to customize their offerings to meet individual needs.

Flexibility

Flexibility describes the responsiveness of a business to adapt to changes in technology and market opportunities by introducing new offerings, broadening its product line, and upgrading its offerings (Alzoraiki et al. 2024). Also, flexibility reflects the fit between business partners and the relationships that are conducive to co-create. Flexibility in service offers and delivery is crucial in the banking industry, as consumer preferences and expectations are continuously developing. As clients

pursue tailored and convenient banking experiences, financial institutions must adopt a flexible approach to service provision. For example, giving variable loan terms, tailored financial advice, or customizable insurance packages allows clients to choose services that best fit their needs. Furthermore, adaptability in integrating emerging technologies, including mobile banking, chatbots, or AI-driven financial instruments, allows banks to deliver novel solutions that clients appreciate. Flexibility also extends to the operational level, with banks offering several touch points (mobile, internet, in-branch) allowing customers to obtain services at their convenience. Brozovic et al. (2016) emphasize that flexibility is crucial for value co-creation, especially in service industries such as banking, where clients anticipate personalized and prompt services.

Service innovation

Service innovation is all about creating value for customers through new or improved services, processes, or business models (Witell et al., 2020). According to Skalen et al. (2019), it involves reconfiguring various resources to create new ones that deliver value to specific stakeholders in a given context. Essentially, service innovation is about crafting fresh or enhanced service products, processes, and business models that benefit consumers, employees, business owners, and other stakeholders (Gago & Rubalcaba, 2022). This process includes developing new value propositions, service concepts, or delivery methods aimed at enhancing customer experiences, boosting operational efficiency, or opening up new revenue streams.

Service innovation can take many forms, such as leveraging technology, streamlining service delivery systems, enhancing client experiences, or creating entirely new service models. The ultimate aim is to carve out a competitive edge by providing unique, tailored, and outstanding service solutions that meet or exceed client expectations, all while driving growth, productivity, and profitability for the service provider. However, measuring and evaluating service innovation can be tricky due to its intangible nature. Researchers have developed various empirical measures to study and assess service innovation. Some scholars argue that service innovation is a complex phenomenon, suggesting that it can appear in different forms and relate to various elements of the value creation process within a service organization (Meigounpoory et al., 2015).

One of the key service innovation frameworks that relates to the service industry was developed by Den Hertog et al (2010) and validated by Meigounpoory et al., (2015). According to the model, there are six main elements of service innovation: the new service concept, the new customer-firm interface, the new organizational service delivery system, the new technological service delivery system, new value system, new revenue model. The study argues that no matter what type of firm it is, service innovation will make its mark through these dimensions. In this research, service

innovation was evaluated by looking closely at the new service concept, new customer-firm interface and new value system.

The New Service Concept involves either creating entirely new service ideas or reworking existing ones. Many of these new concepts are combinatorial, meaning they blend elements from independently existing services or components from other services into a fresh configuration (Van der Aa & Elfring, 2002). Recent studies, like those by Helkkula et al. (2023) and Snyder et al. (2020), have highlighted just how important service concept innovation is across various contexts.

The New Customer-Firm Interface is all about finding fresh ways for service providers and customers to connect, communicate, co-design, customize, and collaborate on production (Normann, 2002). This aspect really highlights the dynamic between the service provider and the client. It covers how services are delivered, the relationship that develops between the client and the provider, and how the consumer experiences the service. It also involves creating new interfaces or channels for clients to interact, like self-service technologies or online platforms. Recent research in this area includes the insightful works of Patricio et al. (2021) and Witell et al. (2020).

New value system or new business partners describes the combinations of service functions provided by a coalition of providers, both parties in the value chain, and actors in the wider value network (Chesbrough, 2003). In the area of service innovation, bringing in fresh value systems or teaming up with new business partners is crucial for boosting service offerings and gaining a competitive edge. Hertog's six-dimensional model of service innovation points out new business partners as a key aspect. This highlights how service creation is evolving through collaborative efforts with partners, going beyond just working with customers to co-produce and co-create (Nguyen et al. 2024).

Research hypotheses

The development of new service concepts, customer-firm interface, and new value system are critical step in the service innovation process, where initial ideas evolve into viable, market-ready solutions through repetitive methods. This transformation relies heavily on dialogue, which facilitates ongoing feedback, aligns stakeholder expectations, and clarifies uncertainties. The interplay between dialogue, a key component of value co-creation, and new service concept, new customer-firm interface, and new value system, a central aspect of service innovation, is essential for enhancing customer experiences and fostering innovation.

Engaging with customers through dialogue can identify potential areas for partnership, guiding banks in selecting business partners that align with customer values and expectations. This dynamic interaction not only fosters innovation but also builds trust and strengthens customer relationships. Royo-Vela et al. (2024) highlighted that strategic value co-creation, influenced by dialogue, can lead to greater trust and reputation in online banking. This study underscored the significance of communication in crafting user-focused solutions, where customer feedback was seamlessly turned into design upgrades. This article proposes that;

H1: Dialogue has a significant positive effect on New Service Concept of Deposit Money Banks in North-Central, Nigeria.

H2: Dialogue has a significant positive effect on New Customer-Firm Interface of Deposit Money Banks in North-Central, Nigeria.

H3: Dialogue has a significant positive effect on new value system of Deposit Money Banks in North-Central, Nigeria.

Access empowers customers by providing them with relevant, timely, and transparent data about products, services, and processes which fosters trust and enables customers to participate actively in the co-creation of value. For instance, Malik and Ahsan (2019) found that access to information significantly influences co-creation and customer satisfaction in the banking sector. Their study revealed that customers' access to information positively relates to co-creation for innovation.

The synergy between access, new service concepts, customer-firm interface and new value system is evident in how transparent information sharing informs and shapes service innovations. When customers have access to comprehensive information, they can provide valuable feedback and insights that guide the creation of new service offerings (Payne et al. 2021). This collaborative approach ensures that service innovations are grounded in actual customer needs, enhancing their relevance and effectiveness. The studies reviewed consistently point out that having access to information is crucial for shaping the relationship between customers and businesses. This article proposes that;

H4: Access has a significant positive effect on New Service Concept of Deposit Money Banks in North-Central, Nigeria.

H5: Access has a significant positive effect on New Customer-Firm Interface of Deposit Money Banks in North-Central, Nigeria.

H6: Access has a significant positive effect on new value system of Deposit Money Banks in North-Central, Nigeria.

As financial institutions navigate the fast-paced world of technology, shifting customer expectations, and changing regulations, their ability to adapt and innovate is what sets them apart from the competition. Research indicates that banks that embrace flexibility in their innovation processes see improvements in customer satisfaction and loyalty (Foss & Saebi, 2017). When banks exhibit flexibility in their operations and employee behaviors, they can more effectively respond to customer feedback and changing market conditions, leading to the creation of innovative service offerings. A flexible mindset enables banks to seamlessly incorporate new technologies into their services, helping them stay relevant in an ever-changing digital landscape (Chishti & Barberis, 2016). Findsrud (2020) discusses how agility, encompassing both adaptive and creative resource integration, enables organizations to function smoothly in dynamic contexts and engage in disruptive activities, which are essential for service innovation. The article proposes that;

H7: Flexibility has a significant positive effect on New Service Concept of Deposit Money Banks in North-Central, Nigeria.

H8: Flexibility has a significant positive effect on New Customer-Firm Interface of Deposit Money Banks in North-Central, Nigeria.

H9: Flexibility has a significant positive effect on New value system of Deposit Money Banks in North-Central, Nigeria.

Conceptual Framework

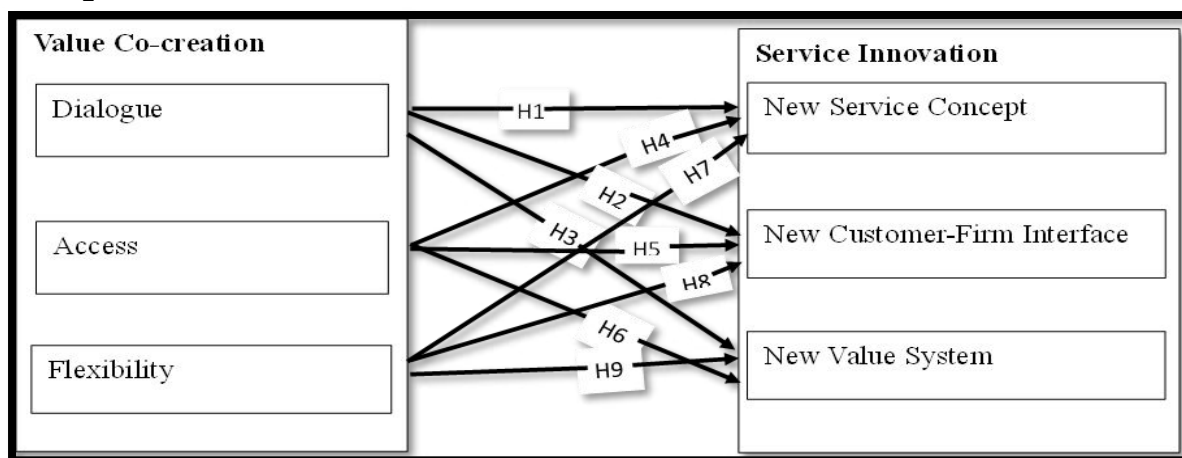


Figure 1: Conceptual framework for the study

Source: Researcher's, 2025

Theoretical Framework

The study was anchor on Service Dominant Logic (S-D logic) theory, which was introduced by Vargo and Lusch back in 2004. At its core, S-D logic suggests that service, rather than just goods, is the key driver of exchange. It posits that customers are not just purchasing products or services; they are actually buying the value that those products or services bring. This theory highlights the importance of co-creating value between the provider and the customer, with the customer playing an active role in the process. These concepts have been periodically updated and refined in the literature, with contributions from Vargo & Lusch (2016) and Leclercq et al. (2020). In a nutshell, S-D logic offers a useful framework for grasping the connection between value co-creation and service innovation.

Resource-Based Theory (RBT) was first introduced by Penrose in 1959 and later expanded by Barney in 1991. This theory emphasizes the importance of an organization's internal resources and capabilities, which can be harnessed to create value through collaboration with customers. Essentially, it posits that a company possesses a mix of tangible and intangible resources that play a crucial role in executing strategies, ultimately leading to a sustainable competitive edge (Barney, 1991; Egbetokun, 2015). Research by scholars like Payne et al. (2008), Vargo et al. (2008), and Galbraith (2013) has utilized Resource-Based Theory to explore how firms and customers integrate resources for value co-creation.

Furthermore, one of the key theories supporting this study is Dynamic Capability Theory (DCT), which was introduced by Teece et al. in 1997. This theory sheds light on how companies develop, integrate, and adjust their internal and external resources to keep up with fast-changing environments. DCT offers a valuable perspective on how businesses utilize co-creation activities to identify market needs, seize innovative opportunities, and reorganize resources to create top-notch services. Companies that engage in co-creation are always gathering insights from customers, stakeholders, and competitors, which boosts their ability to spot new opportunities for service innovation (Teece, 2018). Dynamic Capability Theory serves as a crucial framework for understanding how companies sense opportunities, act on them, and effectively reconfigure their resources to ultimately enhance adaptability.

Research Methodology

This study employed a survey design, which is a great way to gather data from a diverse group of respondents, especially in areas like social sciences and organizational behavior research (Roztocki & Morgan, 2002). The study specifically targeted a population of 817 Deposit Money Banks in North Central region comprising of Kwara, Kogi, Benue, Nasarawa, Niger, Plateau including FCT Abuja (CBN, 2020; Siano, 2020). All of which are licensed by national, international, and regional authorities

From the population a sample size of 269 respondents were drawn using Slovin's 1960 formula. As noted by Blunch (2013), the research followed the established guidelines for studies utilizing Structural Equation Modelling (SEM). In SEM research, a sample size of 200 is typically considered sufficient, while 300 is often viewed as the ideal target. Also, the study employed Bourley's proportionality formula to appropriately distribute the sample size among the states. The research used a stratified and simple random sampling approach, meaning the target population was divided into various strata, and a random sample was drawn from each stratum to ensure that all groups are adequately represented.

The study used a structured questionnaire with a five-point Likert scale ranging from strongly disagree to strongly agree. The measurement scales for the independent variables are adopted from Zhang et al. (2011); Zaborek and Mazur, (2019), and Chen et al. (2017). While the dependent variables are adopted from Wang, et al. (2019); Bhat and Sharma (2021) and Meigounpoory, et al. (2015). To prepare the data for SEM, the study evaluated convergent validity through composite reliability (CR) and Average Variance Extracted (AVE). It also took into account the Cronbach's alpha reliability test. Lastly, the study performed a confirmatory factor analysis (CFA) to check how well the data aligns with the SEM model.

Data Presentation, Analysis, and Discussion of Findings

The researcher distributed 269 questionnaires to the respondents, out of which 258 were correctly filled and returned, giving a response rate of 96%. The answers supplied by the respondents according to the questionnaires were used for the analysis.

Table 1.1 Demographic Characteristics

	Responses	Frequency	Valid Percent
Sex	Male	170	65.9%
	Female	88	34.1%
	Total	258	100%
Qualification	BSc/HND	194	75.2%
	MSc/MBA	45	17.4%
	PhD	19	7.4%
	Total	258	100%
Work Duration	3-5 years	26	10.1%
	6-10 years	161	62.4%
	11-15 years	62	24.0%
	16-20 years & above	9	3.5%
	Total	258	100%

Job position	Senior Staff	209	81.0%
	Junior Staff	49	19.0%
	Total	258	100%

Validity and Reliability Test

Table 1.2 Summary of measurement index

Variables	Composite Reliability	Average Variance Extracted (AVE)	Cronbach's Alpha
Dialogue	0.72	0.57	0.87
Access	0.58	0.70	0.82
Flexibility	0.67	0.62	0.77
New Service Concept	0.73	0.57	0.75
New Customer-Firm Interface	0.74	0.69	0.82
New Value System	0.77	0.56	0.83

Note: CR ≥ 0.60 ; AVE ≥ 0.5 ; $\alpha \geq 0.7$

Table 1.2 reveal that every item meets the necessary standards for these tests. To assess convergent validity, the study examined composite reliability (CR) and Average Variance Extracted (AVE). The findings suggest that the convergent validity of the construct is quite satisfactory, as all items achieved a CR of 0.6 or higher, and the AVE surpassed the 0.5 acceptance threshold (Ode & Ayavoo, 2019). The study also conducted a reliability analysis to evaluate the internal consistency of the study constructs using Cronbach's Alpha (α). The results indicated that all constructs exhibited acceptable to good reliability, with Cronbach's Alpha values ranging from 0.75 to 0.87, reflecting strong internal consistency. Importantly, none of the constructs record below the minimum recommended threshold of 0.70, confirming that the measurement scales used in this study are robust and suitable for further statistical analyses, like Structural Equation Modeling (SEM).

Correlations Analysis

A Pearson correlation analysis was carried out to explore the relationships among various study variables, such as dialogue, access, flexibility, new service concept, new customer-firm interface, and new value system. The correlation coefficients (r), significance levels, and sample size ($N = 258$) are detailed in Table 1.3. Coefficients marked with $p < .01$ (**) and $p < .05$ (*) highlight statistically significant relationships. In summary, access and the new value system share the strongest relationship, indicating that improved access could be key to value creation. Meanwhile, dialogue has the weakest correlations, implying that while

communication is valuable, it may not be the primary driver of service innovation or flexibility.

Table 1.3 Summary of Correlation Coefficients

	Variables	1	2	3	4	5	6
1	Access	0.82					
2	Dialogue	.251**	0.87				
3	Flexibility	.299**	.329**	0.77			
4	New Service Concept	.335**	.218**	.471**	0.75		
5	New Cust. -Firm Interface	.451**	.293**	.248**	.367**	0.82	
6	New Value System	.514**	.223**	.312**	.402**	.374**	0.83

Note: **correlation is significant at the 0.01 level (2-tailed) *Correlation is significant at the 0.05 level (2-tailed)., n=258, Diagonal values = Cronbach's Alpha.

Confirmatory Factor Analysis

Table 1.4 below summarizes how the model fits for independent and dependent variables after conducting the Confirmatory Factor Analysis (CFA). The key fit indices focused on include the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Chi-square/degree of freedom (CMIN/df), Tucker Lewis index (TLI), Incremental Fit index (IFI), Normed Fit index (NFI), and Standardized Root Mean Square Residual (SRMR). The results from the Confirmatory Factor Analysis (CFA) show that all the constructs meet the recommended thresholds for each fit index. Even though CMIN/DF for access is slightly outside ideal thresholds, it is still within an acceptable limit, accompanied by strong overall fit, particularly in the CFI, TLI, IFI, and SRMR indices. These validated constructs are now ready to be used in structural equation modeling (SEM).

Table 1.4 Overall measurement model fit measures after modification

Measurement models	CMIN/D (χ^2 /df)	RMSEA	CFI	TLI	IFI	NFI	SRMR
Dialogue	1.496	.044	.996	.990	.996	.988	.0193
Access	3.268	.084	.990	.975	.99	.986	.0334
Flexibility	.562	.000	1.00	1.00	1.00	.995	.0151

New Service concept	2.888	.083	.994	.963	.994	.991	.120
New-Customer-Firm Interface	2.896	.038	.988	.930	.988	.986	.0178
New Value System	1.532	.045	.999	.993	.999	.997	.0081

Structural Equation Model

The results are shown using maximum likelihood estimation, featuring both standardized and unstandardized regression coefficients, critical ratios (CR), and significance levels. The study performed SEM analysis to explore the relationships between variables and measure their predictive strengths.

Table 1.5 Summary of Structural path

H	DV	IV	B	S.E.	C.R.	P	β	Remarks
H1	New Service Concept ←	Dialogue	0.013	0.020	0.686	0.493	0.039	Not Supported
H4	New Service Concept ←	Access	0.14	0.039	3.596	0.001	0.205	Supported
H7	New Service Concept ←	Flexibility	0.335	0.048	6.965	0.001	0.405	Supported
H5	New-Customer-firm Interface ←	Access	0.478	0.072	6.609	0.001	0.384	Supported
H2	New-Customer-firm Interface ←	Dialogue	0.104	0.036	2.859	0.004	0.167	Supported
H8	New-Customer-firm Interface ←	Flexibility	0.108	0.089	1.210	0.226	0.072	Not Supported
H6	New Value System ←	Access	0.793	0.099	8.034	0.001	0.451	Supported
H3	New Value System ←	Dialogue	0.05	0.050	1.014	0.311	0.057	Not supported
H9	New Value System ←	Flexibility	0.337	0.122	2.760	0.006	0.158	Supported

(Accept hypothesis if p-value is less than 0.05 and accept hypothesis if CR is greater than 1.96)

Test of Hypotheses

Table 1.5 presents the outcomes from the Structural Equation Modelling analysis. For New Service Concept, it turns out that Access ($\beta = 0.205$, $p < .001$) and Flexibility ($\beta = 0.405$, $p < .001$) play significant positive roles and are crucial predictors. On the other hand, dialogue ($\beta = 0.039$, $p = .493$) did not show any significant predictive power. These results highlight how vital accessibility and flexibility are for nurturing innovative service concepts. Consequently, Hypothesis (H1), which suggested that Dialogue positively influences new service concept, was not supported. In contrast, Hypotheses H4 and H7, which proposed that both access and flexibility have a

positive significant effect on new service concept, were indeed supported or accepted.

The findings revealed that Access ($\beta = 0.384, p < .001$) and Dialogue ($\beta = 0.167, p = .004$) emerged as significant predictors of New Customer-Firm Interface. However, Flexibility ($\beta = 0.072, p = .226$) did not significantly contribute to this outcome. Thus, Hypotheses H5 and H2, which revealed that both access and dialogue have a positive effect on new customer-firm interface, were supported. On the other hand, Hypothesis H8, which stated that flexibility has a positive significant effect on new customer-firm interface, was not supported or rejected.

Finally, the results for the New Value System showed that Access ($\beta = 0.451, p < .001$) and Flexibility ($\beta = 0.158, p = .006$) were significant positive predictors. However, dialogue ($\beta = 0.057, p = .311$) was not a significant predictor. Therefore, Hypotheses H6 and H9, which asserted that both access and flexibility have a positive and significant effect on new value system, were supported. Meanwhile, Hypothesis H3, which claimed that dialogue has a positive significant effect on new value system, was not supported or rejected.

Discussion of Findings

New service concept

The analysis reveals some interesting insights about the impact of Access ($\beta = 0.205, p < .001$) and Flexibility ($\beta = 0.405, p < .001$) on new service concepts. It turns out that these two factors play a significant role, while Dialogue ($\beta = 0.039, p = .493$) does not have an effect. This highlights just how crucial accessibility and flexibility are when it comes to driving service innovation. Interestingly, this aligns with research by Husain et al. (2024), which researched how organizational flexibility and support influence service innovation through learning in IT solution providers in India. The study found that being flexible boosts learning capabilities, which then enhances innovation in services. However, the fact that dialogue is not a significant predictor of new service concepts aligns with Alosani and Al-Dhaafri (2023) findings. Their research on innovative culture and knowledge sharing showed that just talking about ideas is not enough; without a supportive culture or effective ways to turn those discussions into action, dialogue alone may not drive service innovation significantly.

New Customer-Firm Interface

The analysis shows that in new customer-firm interface, both access ($\beta = 0.384, p < .001$) and dialogue ($\beta = 0.167, p = .004$) are key predictors, while flexibility ($\beta = 0.072, p = .226$) has no significant impact on the outcome. This finding is in line with the research by Xiao et al. (2020), which explored how customer resources affect customer value during co-creation. Their study found that resources like human and relationship assets positively impact customer value through interactions with firms.

These interactions, made easier by accessible platforms, boost both practical and emotional benefits for customers. On the other hand, the result regarding flexibility does not align with the study by Jafari et al. (2022) on the connection between supply chain flexibility and customer responsiveness. The study found that the relationship is quite complex, possibly influenced by factors like a firm's innovation orientation.

New Value System

The study revealed that within the new value system framework, access ($\beta = 0.451$, $p < .001$) and flexibility ($\beta = 0.158$, $p = .006$) are both significant positive predictors, while dialogue ($\beta = 0.057$, $p = .311$) does not have a significant impact. This suggests that improving accessibility and adaptability is key to developing new value systems, whereas just having a conversation might not be enough. The notable positive impact of flexibility on new value systems is in line with a study by Hafstad et al. (2024), which looked at how flexible organizational values, a supportive climate, and employee attitudes are interconnected. Their findings showed that when employees perceive a flexible culture that values innovation, autonomy, collaboration, and support, they tend to be more committed to the organization and more open to change. This suggests that creating a flexible work environment can be crucial for nurturing new value systems. On the other hand, the finding that dialogue does not significantly predict new value systems aligns with research by Bellis et al. (2024), which examined how dialogue is used in strategy implementation. The study found that the effectiveness of dialogue hinges on how it is structured and the context in which it takes place. This implies that although dialogue can spark change, its effectiveness in shaping new value systems might depend on certain factors, like how meaningful the interactions are and the current culture within the organization.

Conclusion

The results of this research shed light on how access, flexibility, and dialogue as dimensions of value co-creation influence new service concepts, new customer-firm interface, and new value systems as dimensions of service innovation. The study concludes that dialogue does not have a significant positive effect on new service concept or new value system. This suggests that while communication is a vital part of business, it might not be the sole driver of innovation.

On the other hand, dialogue has a positive significant effect on new customer-firm interface, highlighting that meaningful and structured communication is key to boosting engagement and strengthening the bonds between firms and their customers. Also, access, which is all about how easily resources, information, and services can be obtained, emerged as a crucial factor across all three dependent variables. Its strong positive influence on new service concept, new customer-firm

interface, and new value system reinforces the notion that accessibility is essential for fostering innovation.

Finally, flexibility showed a more mixed impact. While it played a significant role in the new service concept and the new value system, it did not significantly affect new customer-firm interface. This indicates that although being adaptable is important for driving innovation and shaping new value systems, it might not be the main factor in direct interactions with customers.

Theoretical Implications

The positive impact of access and flexibility on the new service concept supports the idea that service innovation thrives on easy access to resources and an organization's ability to adapt to ever-changing market demands. On the other hand, the lack of a significant role for dialogue challenges the traditional view that emphasizes customer co-creation through communication. This indicates that while engaging customers is crucial, it needs to be combined with real accessibility and flexibility to truly spark innovation. Moreover, the positive influence of access and dialogue on the new customer-firm interface aligns well with relationship marketing theories, especially Service-Dominant (S-D) Logic, which highlights the importance of interactive communication in creating value together. The fact that flexibility does not significantly impact this interface suggests that being adaptable on its own does not necessarily strengthen customer relationships unless it is paired with accessibility and effective communication strategies.

Finally, the strong effects of access and flexibility on the new value system back up resource-based and dynamic capability theories, indicating that organizations generate value by ensuring critical resources are available and by being able to adjust to market conditions.

Recommendations

Based on the study's findings, here are some recommendations for organizations looking to boost their service innovation and create more value:

1. Organizations should invest in technology like AI-driven customer support and cloud-based solutions to streamline interactions.
2. Organizations should develop flexible business models by implementing agile service structures that can quickly adapt to changing customer needs.
3. Organizations should improve two-way communication by establishing feedback mechanisms, fostering personalized interactions, and launching customer engagement programs.
4. Organizations should not rely on conversational engagement, instead prioritizing execution, accessibility, and adaptability.

Areas for Further Studies

Further research should focus on comparative analysis across various industries, like healthcare, to uncover how access, flexibility, and dialogue operate differently. Also, conducting longitudinal studies could shed light on how these elements change over time.

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