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HUMAN CAPITAL DRIVERS TO SERVICE INNOVATION: EVIDENCE FROM ISLAMIC BANKING IN INDONESIA

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ABSTRACT

This study examines the human capital drivers and how they contribute to service innovation in Indonesian Islamic banking. A questionnaire is used to gather data from a total of 225 Islamic banking employees, and then partial least squares structural equation modeling (PLS-SEM) is applied for data analysis. Moreover, the Maqashid Sharia concept from Abu Zaharah is used to enrich the study findings from an Islamic viewpoint. The findings reveal that human capital drivers comprising leadership strategies, employee engagement, and workforce optimization have both direct and indirect positive effects on service innovation. We believe that our key contribution to the work is providing a service innovation model, where the constructs in the framework employed so far have not been studied comprehensively in the context of Islamic organizations. Furthermore, the developed model integrates more relevant factors to the construction of a strategic human capital management system that can boost service innovation in Islamic banking.

Keywords: Human capital drivers, Service innovation, Islamic banking.
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I. INTRODUCTION

The digital era came earlier than predicted and much faster than expected (OECD, 2020). Driven mainly by technological advances, it has the potential to cause disruption or turmoil (Atje et al., 2020), notably in the banking sector. According to Loucks et al. (2018), financial services is the fourth most disrupted industry. They further state that, based on the digital vortex phenomenon, the Indonesian financial industry is ranked first in terms of disruption. This disruption manifests itself in the emergence of new financial services that are substitutes to banking financial services. Consequently, banks must shift the focus from products to customers if they want to survive in the era of disruption.

The banking industry offers financial service products and thus they compete more on service than on physical products. The industry must continue to improve its services to meet the rapidly-growing need for financial services (Basdekis et al., 2022), which also have become more complex and personalized (Bradley et al., 2015; Basdekis et al., 2022). Innovation is one of the keys to being able to gain a sustainable competitive advantage (Carlborg et al., 2014; Durst et al., 2015; Lay Hong et al., 2016), including innovation in services. Service innovation creates value for customers, employees, business owners, and communities through new and/or improved service offerings or business models (Ostrom et al., 2010), while shaping existing markets and creating new ones (Gustafsson et al., 2020; Snyder et al., 2016; Witell et al., 2016).

Service innovation is a multidimensional-phenomena that can take numerous shapes and be linked to various sections in a firm's value creation process (Den Hertog, 2010). There are various experts who offer the service innovation dimension, but den Hertog's Six-Dimensional Service Innovation Model is the most extensively used. Many studies have utilized the model to quantify service innovation; however, most service innovation research is done in manufacturing organizations, with only a few exceptions looking at service innovation in banks (Gianiodis et al., 2014; Hanif & Asgher, 2018; Lay Hong et al., 2016; YuSheng & Ibrahim, 2019). Service innovation in the banking industry is difficult to develop because of strict regulations to protect stakeholders (Das et al., 2018; Dörner et al., 2011).

Service innovation becomes more challenging in Islamic banking because, in addition to tight banking regulations, Islamic banking must comply with Islamic laws or sharia principles. This paper examines service innovation in the Indonesian Islamic banking, which is noteworthy for three reasons. First, as an implementation of Islamic values, Islamic bank products and services are considered not to have an adequate working model (Laldin & Furqani, 2016). Second, as a result of the first condition, Islamic banks tend to imitate conventional bank products and services, but adapted to be complying with Islamic law. This means that the service innovation dimension of Islamic banks is not yet established. Third, due to the aforementioned second criterion, Indonesia still occupies the third cluster in the innovation of Islamic banking products and services. In comparison, the fourth or highest cluster, which in the most innovative in product development, consists of Malaysia, the United Arab Emirates, and Bahrain (Di Mauro et al., 2013).

This means that the innovation of sharia banking products and services in Indonesia is still lacking and far behind. Undoubtedly, there is a strong relationship

between product and service innovation of Islamic Banking and market attention. The more innovative Islamic banking is in products and services, the faster its market will grow. Thus, the weakness in product and service innovation of Islamic Banking must be tackled to accelerate the development of Islamic Banking.

Existing studies suggest several factors that influence service innovation in Islamic banks. In particular, Pertiwi et al. (2020) and Pertiwi et al. (2021) show that there are several factors that influence service innovation. These include the style of management communication, organizational structure, vision, leadership, idea generation, and simultaneous development activities. Heavy reliance on product champions, employee effectiveness, the marketing function, risk management, technology, and market knowledge are also depicted as additional organizational influences. However, for the service industry, human capital is viewed to have the most influence. For this reason, this paper empirically examines the influence of human capital on service innovation.

Coff (2002) defines human capital as knowledge, skills, and abilities embodied in people. According to Mariz-Perez et al. (2012), the major aim of human capital is innovation in new products, services, or business processes. Human capital, according to Pasamar et al. (2019), is the combined knowledge, innovative skills, and abilities of the company's employees, while Madgavkar et al. (2022) define human capital as the collection of each employee's competencies, knowledge, and aptitudes concerning specific projects, as well as the potential to contribute to this pool of human capital in terms of knowledge and capabilities through personal learning. Human capital generates and stores knowledge. It may absorb, organize, and generate knowledge as a source of innovation (Smith et al., 2005). We can conclude from this premise that human capital is critical to the development of service innovation.

Human capital can improve service innovation in many ways because human capital is the key to growth and innovation (Aman-Ullah et al., 2022). As such, investment in human capital management (HCM) become crucial. Bassi and McMurrer (2007) state that the standard paradigm of assessing HCM, such as employee turnover rate, average time to fill open positions, and total hours of training delivered, is insufficient to predict organizational performance. Bassi and McMurrer then suggest HR departments to move beyond their usual focus on activities and process. With HCM measurement tools, HR can start gauging how well people are managed and developed throughout the organization. Furthermore Bassi & McMurrer (2006) reveal a core set of human capital management drivers that predict performance across various organizations and operations. These drivers are leadership behaviors, employee engagement, knowledge accessibility, workforce optimization, and learning capacity that can measure HCM qualities (Bassi & McMurrer, 2006; Bassi & McMurrer, 2007). The question then becomes whether these drivers are equally valuable to all firms.

While we take lead from the above studies, we contribute to the literature by providing an assessment of human capital drivers and service innovation indicators in organization that brings religious values into its vision using quantitative approach. Existing literature on the subject predominantly centers on manufacturing firms. Only recently we have seen several (but still a limited number of) studies that focus on the banking industry. In addition, existing

analyses tend to focus on how to measure service innovation in organization. The present paper extends the analysis by evaluating the impacts of various drivers of human capital on service innovation using quantitative approach. The question that we raise: what are drivers of human capital that improve service innovation?

II. LITERATURE REVIEW

Innovation is unquestionably one of the most important pillars of corporate competitiveness. We are all aware of the beneficial consequences of technical innovation, given the potential for increased productivity, new product development, increased quality and distinction, cost reduction, and price competitiveness, and so on. Due to these, innovation is crucial to boosting firm value (Tseng & Goo, 2005). For the service industry, Edvardsson & Olsson (1996) and Sundbo (1997) pioneer research on service innovation.

While various definitions of service innovation have emerged following these pioneering works, it generally relates to innovation occurring in various contexts of services, such as the introduction of new services or incremental enhancements to current services, or an organization's ability to introduce new or significantly improved services (Blommerde, 2022). Service innovation is developed to respond to changing customer demands (Thakur & Hale, 2013), especially in the disruptive era. This phase is distinguished by the interaction between the service innovation component and the business model, with the goal of achieving a competitive advantage (Kindström & Kowalkowski, 2014; Ostrom et al., 2010). Service innovation is a role that must be taken by strategic management because of the multidimensionality contained therein in the strategic realm of a company.

Research on service innovation explore various benefits of the service innovation. These benefits include attracting new customers, increasing satisfaction and loyalty, reducing operational costs, entering new markets, and, ultimately, increasing profitability, enhancing competitiveness, and improving overall performance (Heinonen & Strandvik, 2021; Tajeddini & Martin, 2020). The research also identifies the dimensions that comprise service innovation (Carlborg et al., 2014; Den Hertog, 2010; Kindström & Kowalkowski, 2014). The most frequently used dimension is six-dimension service innovation model consisting of new service concept, new customer interaction, new value system/business partners, new revenue model, new organizational or technological service delivery system (Den Hertog, 2010).

In the literature, limited research has explored the factors that influence service innovation in companies. In fact, research results demonstrate that service innovation has many benefits and improve organizational performance. This paper fills this gap by examining empirically the influence of human capital drivers, as key organizational drivers, to service innovation. It focuses on service innovation in Islamic banking, the industry that has received even limited attention.

Islamic banking is a highly regulated industry, yet it also requires innovation to compete with conventional banking. As a result, it is vital to assess the level of service innovation and its determining factors. This study focuses on the role of human capital drivers in service innovation. Zimmerman (2016) notes the importance of human capital. It is one of the factors that determine organizational

competitiveness, since competencies, knowledge, creativity, capacity to resolve problems, leadership and personal compromise are assets required to meet the demands of turbulent environments and achieve organizational goals.

The human capital drivers in present study are based from Bassi & McMurrer (2006), who propose an HCM methodology to identify and manage process variations in HCM. It is time for HR departments to move beyond their usual focus on activities and process efficiency, such as the number of training courses offered or how long it takes to fill a vacant position. With HCM measurement tools, HR can start gauging how well people are managed and developed throughout the organization. Bassi & McMurrer (2006) develop a core set of HCM drivers that predict performance across various organizations and operations. It comprises Leadership Practices, Employee Engagement, and Workforce Optimization.

The present study centers on Islamic banking, where its objectives and management is based on the Maqasid al-Shariah. The Maqasid al-Shariah, or purposes or objectives of Sharī'ah, is the raison d' entre of the implementation of Islamic law (sharia) to achieve blessing for humanity (rahmatan lil alamin) through enhancement of welfare and benefits and elimination of harm and misery. Mohammed et al. (2008, 2015) derive the objectives of Islamic Banking that align with the Maqasid al- Shariah. While there are several maqashid sharia frameworks proposed by Muslim scholars, the one that is mostly adopted for Islamic banking studies is from Al-Ghazālī (n.d.) and Abu Zahrah (1997).

Abu Zahrah's framework is a more contemporary interpretation of maqashid and more implementable in the organizational context. According to Abu Zahrah the achievement of Maqashid Shariah could at least be seen in three dimensions: education (Tahdhib al-Fard), establishment of justice (Iqamah al-'Adl), and promotion of welfare (Jalb al-Maslahah). Mohammed et al. (2008) initiate the development of the Maqashid Shariah Index using Abu Zaharah's framework, which has late been replicated, adapted, and modified by some scholars (Ascarya & Masrifah, 2023; Ascarya et al., 2017; Hosen et al., 2019; Mifrahi & Fakhrunnas, 2018; Nugraha et al., 2020; Permana et al., 2017; Rusydiana & Sanrego, 2018; Soleh, 2016; Antonio et al., 2012).

This study uses the first dimension of maqashid sharia from Abu Zahrah (1997) to explore the human capital of Indonesian Islamic banking from an Islamic viewpoint. This first dimension is educating people (Tahdhib al-Fard), namely, disseminating and instilling knowledge and skills in individuals Mohammed et al. (2008); for an organizational context, this relates to the quality of human capital. The inclusion of human capital issues in maqashid sharia dimension indicates that it is an important part of Islamic law and goals. However, the concept of human capital is still operationalized in a limited way by Mohammed et al. (2008) using some measures: educational grants, research grants, research expenses, and training expenses. Thus, in this research, we use service innovation indicators from Den Hertog (2010) and human capital driver indicators from Bassi & McMurrer (2006). Our study serves as a preliminary discussion of human capital from the maqashid sharia perspective.

III. METHODOLOGY

3.1. Data

This study employs primary data gathered through questionnaire comprising questions to capture the knowledge and behavior or habits of the respondent (Sekaran & Bougie, 2016). The questionnaire is constructed through focus group discussion (FGD) and interview with key persons fromthree banks, namely (1) Bank Syariah Mandiri (BSM) as the market leader; (2) BNI Syariah as the market challenger; and (3) BJB Syariah and Bank Aceh Syariah as the regional bank. We involve top management and employees in the service, innovation, and human capital development department. The FGD and interview relates to human capital and service innovation implemented by the banks. We also conduct a pilot study of some bank employees to make sure the accuracy of the instruments. The questionnaire consists of 20 statement items that represent the variables in this study (leadership practices, employee engagement, workforce optimization, and service innovation). The details of the instruments are in Table 3.

The distribution of the questionnaire is via online and data collection took two months. The population of this study is all employees of Islamic banks in Indonesia. We use cluster sampling to meet the regional representation of Islamic Banks in Indonesia. The cluster is divided based on types of banks and regions (see the Table 1). We also uses the purposive sampling method to select the research sample. There is a set of criteria that are required in the purposive sampling method. In our case, the respondent criteria are Islamic Banking employees who have worked a minimum of two years. Through these, we have a sample 225 Islamic banking employees.

Table 1.
Cluster of Islamic Banking Industry

Cluster Based on Type of Business Entity	
State-Owned Enterprises (Indonesian: BUMN)	Bank Syariah Mandiri
	BNI Syariah
	BRI Syariah
	BTPN Syariah
Regional-Owned Enterprises (Indonesian: BUMD)	BJB Syariah
	Bank Aceh Syariah
	Bank NTB Syariah
Private Bank	BCA Syariah
	Bank Mega Syariah
Cluster Based on Region	
Western Indonesian Region	Jawa-Sumatera
Central Indonesian Region	Bali
	Kalimantan
	Sulawesi
East Indonesian Region	NTB

Table 2.
Respondents Characteristic

	Characteristics	N	Percentage
Age	20-30	58	25.8%
	30-40	132	58.5%
	40-55	35	15.7%
Gender	Male	93	41.5%
	Female	132	58.5%
Job Position	Staff	90	40%
	Middle Management	96	42.5%
	Top management	39	17.5%
Length of work	2-7	93	41.5%
	8-15	115	51.15%
	>15	17	7.4%
Islamic Banking	State-owned	97	43%
	Private	52	23%
	Regional-owned	76	34%
Region	Jakarta	33	14.7%
	Yogyakarta	40	17.8%
	Kalimantan-Sulawesi	27	12%
	Central Java	26	11.6%
	Aceh, NTB, Kalimantan, Sumatera	26	11.6%
	East java	16	7.1%
	West Java	57	25.3%

Table 3.
The Instruments Explanation

Variables	Dimensions		Items
Human Capital Drivers (Bassi & McMurrer, 2006)			
Leadership Practices (Bassi & McMurrer, 2006)	Communication	LP1	Bank leader communicates the goals, strategies, and all of the information about company to employees
	Inclusivity	LP2	Bank leader accepts suggestions and working in partner relationship with the employees
	System	LP3	Bank leader provides system to developing the leadership and make sure the leadership transition is going well
Emotional Intelligence (Bassi & McMurrer, 2006)	Job Design	EE1	The jobs in the bank are managed well with the employee skills
	Commitment to employees	EE2	Bank guarantees security while working and gives the opportunity to grow for employees
	Time	EE3	The workload is measured and adjusted to achieve work-life balance
	System	EE4	Bank provides system to evaluating employee involvement with company and customers

Table 3.
The Instruments Explanation (Continued)

Variables	Dimensions		Items
Workforce Optimization (Bassi & McMurrer, 2006)	Process	WO1	How to working process is managed in Standard Operating Procedure (SOP) and employees are trained to obey it
	Accountability	WO2	Employees have the responsibility to working in high quality
Workforce Optimization (Bassi & McMurrer, 2006)	Hiring Decisions	WO3	New employees get the orientation program and training about their job
	System	WO4	Bank provides performance and skill management system to motivate employee's career development
Service Innovation (Den Hertog, 2010)			
New Service Concept (Den Hertog, 2010)	New Target Market	NSC1	Bank provides services to certain segment, such as millennial, halal tourism, Islamic boarding.
	New Formulas	NSC2	Bank attempts to improving brand company continually through change the logo, tagline, or certain color of bank
	New Locations	NSC3	Bank attempts to reach the customers through enlarging bank branch
New Client Interface (Den Hertog, 2010)	New Interfaces	NCI1	Bank enlarges the distribution channels that could be managed by customer itself
	Personalization	NCI2	Bank develops services combination that could be managed by customer itself
New Service Delivery System (Den Hertog, 2010)	Extra Organizational Changes	NSD1	Bank develops close relationship with their customers through some strategies
	New Skills to New Retailing Service	NSD2	Bank develops multi-channel management - responsibility to marketing products to all lines
Technological Options (Den Hertog, 2010)	New ICT system for optimization of logistics	TO1	Bank provides technology information system to make easy performance of back-office staffs
	New ICT system for Consumer Profiling	TO2	Bank provides technology information system-based AI to understanding customer behavior
	New ICT system for E-commerce App	TO3	Bank develops technology information system to improving distribution channel

3.2. Method

This study uses PLS-SEM for data analysis for the following two reasons. First, the PLS-SEM is a standard tool for analyzing the complex models (Sarstedt et al., 2020) and is recommended by Ascarya & Tekdogan (2022) for research in Islamic economics and finance. And second, according to Hair et al. (2019), the issues such as sample size, goodness of fit, and distribution assumptions could be handled by the PLS-SEM. For the measurement, we assess the measurement model based on convergent validity, indicator collinearity, statistical signifance, and other relevance indicator weights (Hair et al., 2019).

Table 4.
Rule of Thumb for Formative Measurement

Criterion	Metrics and Thresholds
Formative measurement models	
Convergent validity (redundancy analysis)	≥ 0.708 correlation between the formative construct and a reflective (or single-item) measurement of the same concept (Hair et al., 2017).
Collinearity	Critical collinearity issues likely occur if VIF ≥ 5, Not uncritical if VIF = 3–5; not a problematic issue if VIF < 3 (Hair et al., 2014).
Statistical significance of indicator weights	t-values > 2.576 (α = 0.01), 1.960 (α = 0.05), or 1.645 (α = 0.10), respectively (two tailed) The 95% percentile confidence interval (α = 0.05) does not include zero (Hair et al., 2019).
Relevance of indicators with a significant weight	Larger significant indicator weights indicate a higher relative contribution of the indicator to the construct (Hair et al., 2017).
Relevance of indicators with nonsignificant weights	Indicators with loadings of ≥0.50 that are considered relevant (Hair et al., 2017).
Structural model	
Collinearity	Critical collinearity issues likely occur if VIF ≥ 5, Not uncritical if VIF = 3–5; not a problematic issue if VIF < 3 (Hair et al., 2014)
R^2 value	R^2 values of 0.75, 0.50 and 0.25 are considered substantial, moderate and weak (Hair et al., 2017).
Q^2 value	Values larger than zero are meaningful; Values higher than 0, 0.25 and 0.50 depict small, medium and large predictive accuracy (Hair et al., 2017).
f^2 Value	f^2 *value* 0.02 small; 0.15 medium; 0.35 large (Cohen, 1988).
PLSpredic	$Q^2_{predict}$ values > 0 indicate that the model out performs the most naïve benchmark, Compare the MAE (or the RMSE) value with the LM value of each indicator (Shmueli et al., 2019).
Robustness checks	Non linear effects; Endogeneity; Unobserved heterogeneity (Sarstedt et al., 2020).

Source: (Hair et al., 2019)

The structural model in this study comprises both the direct effect and indirect effect. Meanwhile, the interaction effect is implemented through a two-stage approach (Hair et al., 2019). The development of the model in question pertains to the creation of a hierarchical construct known as the formative-formative high-order construct (HOC). There is a formative-formative hierarchical construct model (HCM) from the human capital drivers and service innovation variable. The HCM framework entails a two-stage measurement process. The initial stage is dedicated to acquiring scores for the lower-order construct (LOC), and it necessitates the implementation of an iterative indicator approach. Subsequently, in the second stage, these LOC scores are employed to gauge the HOC model (Sarstedt et al., 2019).

3.3. Model Development

Recently, many researchers emphasize the importance of the knowledge economy for the organization. According to Drucker (1993) as cited in Namasivayam &

Denizci (2006), knowledge economy involves the role of the organization to manage knowledge for organizational growth. Knowledge is linked with the intellectual capital of the organization. The way to manage knowledge, starting from acquiring to applying it, matters for the organization, especially for the Islamic Banking as one of the service-based industry that relies heavily on the knowledge work (Namasivayam & Denizci, 2006).

Following Namasivayam & Denizci (2006), knowledge comes from the experience or expertise of the individual, i.e. human capital. Pickett (2005), states the organization will gain three times of returns if human capital practices are functioning well. This study uses three human capital drivers, namely leadership practices, emotional intelligence, and workforce optimization. All of the drivers highlight the role of the organization in optimizing human capital.

Leadership is a key driver of human capital practices (McCracken et al., 2017). The good leadership is able to provide innovative climates (Alnajdawi et al., 2019). The leadership practices matter because they relate to the way to motivate employees to achieve their best performance (Pickett, 2005). Moreover, the leadership practices will influence how the human capital is developed and deployed successfully.

Employee engagement is the way an organization proactively builds and maintains employee engagement. Engagement itself is supported by conducive work environment (Pickett, 2005), including job designs, working time of the employee, opportunities to upskilling, and recognition of performance.

Workforce optimization relates to the organization capacity to optimize the employee capacity and competence. It consists of the process, conditions, accountability, employment and system in the organization (Poorkiani & Pirmoradi, 2013). Organization has the role to ensuring the business process is running well by having training programs to the employees (process), providing the competitive environment (conditions), rewarding the high performance (accountability), ensuring the right man in the right place (employment), and establishing the performance management system (system). Since human capital practices represent a major portion of the whole of the organization, they cover all the processes, systems, and practices that lead the employee effectiveness (Pickett, 2005).

H1: Leadership practices has a positive and significant effect on the human capital drivers.

H2: Emotional Intelligence has a positive and significant effect on the human capital drivers.

H3: Workforce optimization has a positive and significant effect on the human capital drivers.

Human capital has the great role in creating the competitive advantage of the organization (Chadwick, 2017; Samad, 2020). Highly skilled human capital is needed to boost the industry to be more innovative (Sultana & Adam, 2014). Following Samad (2020), the great innovation organization is driven by the good management of the business practices, workplace management, and the relationship establishment with the stakeholders. It means that human capital drivers in the organization will lead to the innovative performance of the organization.

H4: Human capital drivers have the positive and significant effect on the service innovation.
H5: Leadership practices has the positive and significant effect on the service innovation.
H6: Emotional Intelligence has the positive and significant effect on the service innovation.
H7: Workforce optimization has the positive and significant effect on service innovation.
H8: Leadership practices has the positive and significant effect on the service innovation with the human capital drivers as the mediator.
H9: Emotional Intelligence has the positive and significant effect on the service innovation with the human capital drivers as the mediator.
H10: Workforce optimization has the positive and significant effect on the service innovation with the human capital drivers as the mediator.

Based on the above, we propose a conceptual framework as in Figure 1. The conceptual framework describes the relationship between exogenous variables and endogenous variables both directly (hypotheses 1–7 in the white box) and indirectly (hypotheses 8–10 in the grey box).

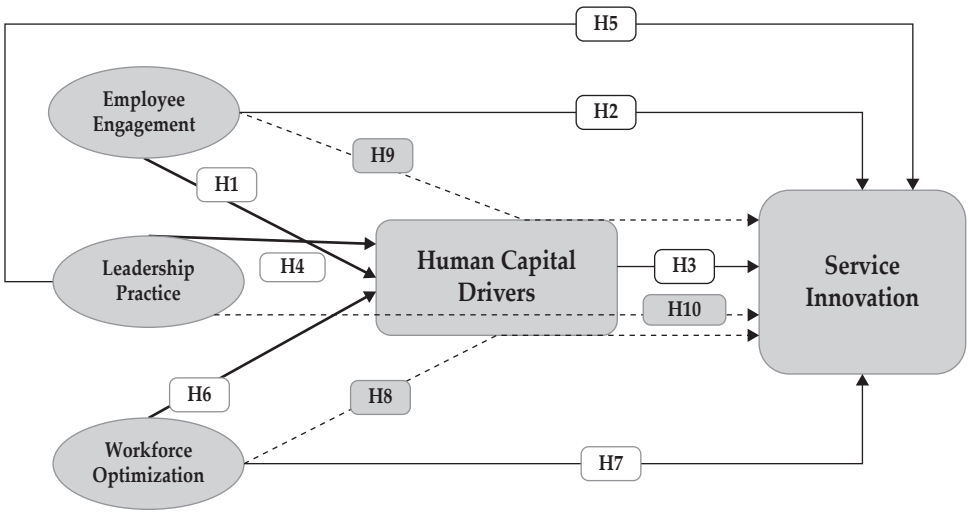

Figure 1.
Conceptual Framework

IV. RESULTS AND ANALYSIS

4.1. Descriptive Statistics

Table 5 presents the descriptive statistics for each indicator and latent variable in the study. The findings indicate that all indicators have mean values exceeding three. Furthermore, the research results also demonstrate that the variables of employee engagement, leadership practices, and workforce optimization exhibit mean values exceeding three. This outcome suggests that a majority of respondents provide positive responses towards each construct measured in this study.

Table 5.
Descriptive Statistics

Indicator	N	Min	Max	Mean	
				Indicator	Variable
EE1	225	1	4	3.253	3.242
EE2	225	1	4	3.298	
EE3	225	1	5	3.151	
EE4	225	1	5	3.267	
LP1	225	2	5	3.582	3.465
LP2	225	2	5	3.458	
LP3	225	1	5	3.356	
NCI1	225	1	4	3.196	3.507
NCI2	225	3	4	3.818	
NSC1	225	2	4	3.533	3.438
NSC2	225	1	5	3.364	
NSC3	225	1	5	3.418	
NSDS1	225	2	5	3.649	3.618
NSDS2	225	1	4	3.587	
TO1	225	1	4	3.520	3.333
TO2	225	1	4	3.018	
TO3	225	1	5	3.462	
WO1	225	2	5	3.627	3.494
WO2	225	1	5	3.631	
WO3	225	1	4	3.396	
WO4	225	1	5	3.320	

4.2. Formative Measurement Model Assessment

This study employs a formative measurement model. In the formative measurement models, evaluation is made for convergent validity, collinearity, and the significance and relevance of indicator weights (Sarstedt et al., 2021). The evaluation is accomplished using outer weight values and their significance (i.e., t- and p-values). The outer weight is derived from a multiple regression analysis with the latent variable scores as the endogenous variable and the formative indicators as the exogenous variables. The threshold criteria utilized are t-values (>1.96) and p-values (<0.05) (Hair et al., 2017). Moreover, within the context of PLS-SEM, tolerance values equal to or lower than 0.20, and VIF values of 5 or higher, respectively, indicate potential collinearity issues.

Table 6.
Formative Measurement Model

	Outer Weight			VIF	CI 2.5%	CI 97.5%
PLS Path	β	***T*-values**	***P* values**			
EE -> HCD	0.461	3.964	0.000	4.244	0.208	0.660
EE1 -> EE	0.162	2.287	0.022	2.452	0.026	0.311
EE2 -> EE	0.409	6.066	0.000	3.225	0.276	0.539
EE3 -> EE	0.036	0.521	0.602	2.740	-0.089	0.185
EE4 -> EE	0.510	6.951	0.000	2.453	0.350	0.640
LP -> HCD	0.211	1.584	0.113	3.780	-0.038	0.482
LP1 -> LP	0.302	4.061	0.000	1.946	0.143	0.439
LP2 -> LP	0.162	1.895	0.058	2.549	-0.001	0.336
LP3 -> LP	0.651	9.494	0.000	2.221	0.513	0.782
NCI -> SI	0.093	1.024	0.306	1.841	-0.089	0.264
NSC -> SI	0.189	1.891	0.059	1.732	-0.022	0.366
NSDS -> SI	0.276	2.670	0.008	1.520	0.055	0.465
TO -> SI	0.624	5.962	0.000	2.155	0.439	0.847
WO -> HCD	0.389	2.954	0.003	3.753	0.145	0.661
WO1 -> WO	0.237	4.423	0.000	1.820	0.131	0.345
WO2 -> WO	0.113	1.658	0.097	2.216	-0.020	0.252
WO3 -> WO	0.061	0.871	0.384	2.143	-0.076	0.201
WO4 -> WO	0.722	14.611	0.000	2.188	0.613	0.808

The research findings indicate that several outer weights of indicators have non-significant values, with *p*-values greater than 0.05 (see Table 6). Specifically, EE3 has a value of 0.602, LP has a value of 0.113, LP2 has a value of 0.058, and WO3 has a value of 0.384. Conversely, examining the loading factor results, values range from 0.704 to 0.963, with *p*-values of all indicators being 0.000 (see Table 7). According to Hair et al. (2017), when an indicator's outer weight is not significant but its outer loading is high (i.e., above 0.50), the indicator is generally retained and should be interpreted as highly important. Moreover, based on Table 6, the VIF values range from 1.520 to 4.244 (<5) (Hair et al., 2017). The comparison of outer weights (formative) reveals that employee engagement exerts the strongest influence on the human capital drivers, and technological options exerts the strongest influence on the service innovation.

Table 7.
Outer Loadings

Indicator	Loadings	Mean	ST.DEV	P values
EE	0.959	0.952	0.019	0.000
EE1	0.819	0.816	0.053	0.000
EE2	0.904	0.900	0.024	0.000
EE3	0.806	0.807	0.035	0.000
EE4	0.919	0.917	0.022	0.000
LP	0.908	0.906	0.031	0.000
LP1	0.809	0.807	0.036	0.000
LP2	0.836	0.833	0.037	0.000
LP3	0.953	0.950	0.018	0.000
NCI	0.704	0.693	0.065	0.000
NSC	0.717	0.700	0.064	0.000
NSDS	0.750	0.728	0.078	0.000
TO	0.949	0.950	0.026	0.000
WO	0.942	0.940	0.024	0.000
WO1	0.730	0.728	0.044	0.000
WO2	0.765	0.765	0.040	0.000
WO3	0.750	0.749	0.039	0.000
WO4	0.963	0.960	0.012	0.000

4.3. Structural Model Assessment (Inner Model)

Structural model analysis, commonly referred to as the inner model, aims to address research hypotheses by elucidating the relationships of influence between latent variables within a model (Hair et al., 2019). Prior to hypothesis testing, a model fit test is conducted. The Standardized Root Mean Square Residual (SRMR) is employed to assess the model's adequacy. The SRMR yields favorable results (i.e., 0.043). This value aligns with the recommendation put forth by Henseler et al. (2014) and Hair et al. (2014). They suggest that a SRMR value of < 0.080 is considered acceptable. Furthermore, the variance inflation factor (VIF) is used to verify the absence of multicollinearity. The VIF yields favorable results (i.e., 3.763 to 4.301) below the threshold of 5 (Hair et al., 2017). This indicates that the research variables are not subject to multicollinearity. In testing the hypotheses, this study employs the bootstrap 5,000 approach (resampling) with bias-corrected confidence intervals and utilizes *p*-values for two-tailed significance (*p: 0.05, **p: 0.01, ***p: 0.001).

Table 8.
Result of Hypothesis Testing

Path Coefficient						
Hypothesis	***B***	**Mean**	**St. Dev**	**T-values**	***p*-values**	**Supported?**
EE -> HCD	0.458	0.438	0.111	4.112	0.000	yes
EE -> SI	-2.939	0.703	0.723	4.064	0.000	yes
HCD -> SI	7.204	-0.824	1.563	4.611	0.000	yes
LP -> HCD	0.212	0.219	0.130	1.639	0.101	no
LP -> SI	-1.369	0.359	0.480	2.854	0.004	yes
WO -> HCD	0.390	0.398	0.130	3.002	0.003	yes
WO -> SI	-2.504	0.642	0.660	3.795	0.000	yes
Mediation Effects of HCD						
Hypothesis	***B***	**Mean**	**St. Dev**	***T*-values**	***p*-values**	**Supported?**
EE -> HCD -> SI	3.300	-0.351	0.704	4.689	0.000	yes
WO -> HCD -> SI	2.809	-0.323	0.639	4.394	0.000	yes
LP -> HCD -> SI	1.529	-0.196	0.438	3.488	0.000	yes

The results of the direct effect analysis are presented in Table 8. Based on the analysis, it is found that employee engagement has a positive and significant influence on human capital drivers ($\beta = 0.458$, $p < 0.05$), and employee engagement has a negative and significant influence on service innovation, with a coefficient equal to -2.939 ($p < 0.05$). Furthermore, human capital drivers exhibit a significant positive impact on service innovation ($\beta = 7.204$, $p < 0.05$), while leadership practices negatively and significantly affect service innovation ($\beta = -1.369$, $p < 0.05$). Additionally, workforce optimization demonstrates a positive and significant influence on human capital drivers ($\beta = 0.390$, $p < 0.05$). Moreover, workforce optimization exerts a negative and significant influence on service innovation ($\beta = -2.504$, $p < 0.05$). However, leadership practices do not have a significant influence on human capital drivers ($\beta = 0.212$, $p > 0.05$).

The results of the mediation effect show that human capital drivers mediate the direct relationship between employee engagement and service innovation ($\beta = 3.300$, $p < 0.05$). Additionally, human capital drivers also mediate the direct relationship between workforce optimization and service innovation ($\beta = 2.809$, $p < 0.05$). On the other hand, human capital drivers mediate the direct relationship between leadership practices and service innovation ($\beta = 1.529$, $p < 0.05$). Thus, the findings of this research indicate that all three mediating relationships in this study are partial in nature (Hair et al., 2017). Consequently, it is concluded that hypotheses (H1, H2, H3, H5, H6, H7, H8, H9, and H10) are supported in this research, while hypothesis (H4) is not supported.

Coefficient of determination (R^2). When assessing the explanatory power of the model, researchers commonly employ cutoff R^2 values of 0.75, 0.50, and 0.25, signifying substantial, moderate, and weak explanatory power, respectively (Hair et al., 2017). The results of the tests reveal that the R^2 value for human capital drivers is 1.000, indicating substantial explanatory power. Meanwhile, for service innovation, the R^2 value is 0.614, suggesting moderate explanatory power. This implies that 61.4 percent of the variation in service innovation is explained by

factors such as human capital drivers, employee engagement, leadership practices, and workforce optimization (see Table 9).

PLSpredict. The R^2 value can only capture the explanatory power within the utilized sample and does not account for the predicted performance outside the sample. Therefore, this research employs the PLSpredict approach, with a primary focus on the service innovation construct. The output in Table 10 demonstrates that the overall predictive values (Q^2) are greater than 0, indicating that the model possesses predictive accuracy. Furthermore, the indicators of root mean squared error (RMSE) and mean absolute error (MAE) for the PLS-SEM model exhibit lower values than those of the naive linear model. This leads to the conclusion that the model in this study exhibits a high predictive capability (Shmueli et al., 2019).

Effect size and predictive relevance. Cohen's f^2 is employed to assess the impact of variables within the model by measuring the alteration in the R^2 value when one of the exogenous construct is omitted from the model. Cohen's f^2 has magnitudes of 0.02 (small), 0.15 (moderate), and 0.35 (large), providing a guideline in assessing the predictive effects (Hair et al., 2019). The f^2 output shows the range of 0.014 to 480.359. Additionally, the analysis of predictive relevance incorporates the utilization of Stone-Geisser's Q^2. This value serves as a benchmark for determining the predictive significance of both exogenous and endogenous variables (Hair et al., 2019). The Q^2 value for the service innovation variable is 0.395, and for the human capital drivers variable, it is 0.871 (both above 0) (see Table 9). This indicates that the observed values have been appropriately captured and, as a result, confirms the model's predictive relevance. In conclusion, the results of the structural model can be observed in Figure 2.

Table 9.
Coefficient Determination and Blindfolding Output

Construct Relationship	SSO	SSE	Q^2	R^2	R^2 adjusted
Human Capital Drivers	675.000	87.309	0.871	1.000	1.000
Service Innovation	900.000	544.474	0.395	0.614	0.607
Employee Engagement	900.000	900.000			
Leadership Practices	675.000	675.000			
Workforce Optimization	900.000	900.000			

Table 10.
PLSpredict

Indicators	PLS SEM		Q^2predict	LM	
	RMSE	MAE		RMSE	MAE
NCI	0.852	0.640	0.281	0.873	0.661
NSC	0.846	0.649	0.291	0.859	0.668
NSDS	0.833	0.638	0.314	0.874	0.620
TO	0.682	0.487	0.539	0.708	0.501

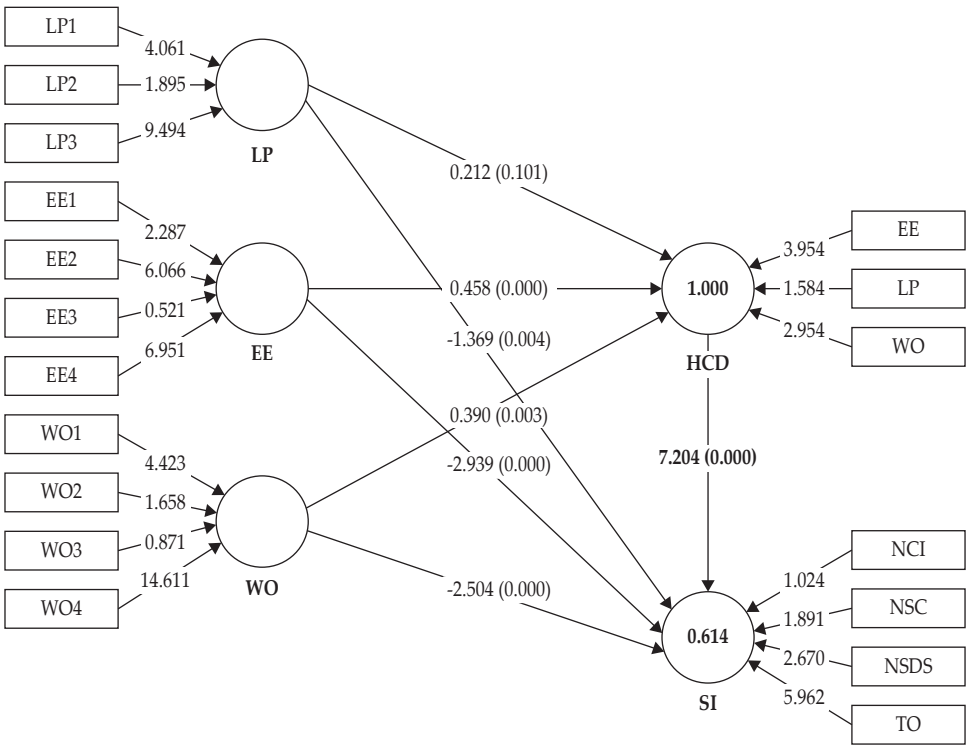

Figure 2.
The Structural Model Results

4.4. Robustness Check

This research employs non-linearity criteria for robustness check, aligning with the guidelines established by Sarstedt et al. (2020). In the context of estimating path models, the assumption is that the relationship between constructs is always linear (based on theory). However, empirically, a linear relationship does not always occur. The presence of statistically significant tests in any partial regression serves as an indicator of potential non-linear impact (Hair et al., 2019). Statistically, when the relationship between two constructs exhibits non-linearity, the magnitude of the effect between them is influenced not only by the extent of change in the exogenous construct but also by its specific value (Hair et al., 2018). Therefore, this study considers the polynomial model and adds a quadratic effect, which is the most common, and cubic effects by default. Previous research conducted by Yusfiarto et al., (2022) has noted the ability of this method for robustness checks. The results derived from the evaluation of the quadratic effect reveal that there is no statistical significance for all paths (> 0,05) (see Table 11). The non-significant interaction term provides evidence of a strong linear effect. It can be concluded that the insignificant interaction offers evidence of the robustness of the linear effect (Sarstedt et al., 2020).

Table 11.
Result of Quadratic Effect

Hypothesis	β	Mean	St. Dev	T-values	*p*-values
EE -> HCD	0.435	0.421	0.112	3.902	0.000
EE -> SI	-2.277	0.633	0.769	2.962	0.003
HCD -> SI	6.218	-0.669	1.746	3.562	0.000
LP -> HCD	0.258	0.260	0.131	1.967	0.049
LP -> SI	-1.448	0.370	0.579	2.499	0.012
WO -> HCD	0.369	0.375	0.131	2.814	0.005
WO -> SI	-2.022	0.572	0.703	2.877	0.004
Quadratic Effect EE -> HCD	-0.001	0.004	0.009	0.101	0.920
Quadratic Effect EE2 -> SI	0.247	0.143	0.206	1.202	0.230
Quadratic Effect HCD -> SI	-0.398	-0.281	0.379	1.049	0.294
Quadratic Effect LP -> HCD	-0.001	-0.004	0.009	0.159	0.874
Quadratic Effect LP2 -> SI	0.106	0.083	0.146	0.729	0.466
Quadratic Effect WO -> HCD	0.002	0.001	0.007	0.287	0.774
Quadratic Effect WO2 -> SI	0.143	0.131	0.158	0.903	0.367

4.5. Analysis and Discussion

According to Namasivayam & Denizci (2006), services industry such as banking relies heavily on knowledge work. Much of the value addition and transfer occurs in the relationship between customers and the services industry. Human capital as the organizational investments has the crucial role in shaping customer opinion about the banking institutions, where employees have high contact with the customer (Namasivayam & Denizci, 2006).

This study focuses on services of the Islamic Banking industry. As we know, Islamic Banking has the fundamental values different from the conventional banking. One of the differences is Islamic values (Islamic worldview) serving as the core basis to all Islamic Banking activities (Antonio et al., 2012). In achieving sustainable growth, Islamic banking must bring benefit to both shareholders and also stakeholders (Mohammed & Taib, 2015; Antonio et al., 2012). This is in line with the Maqashid Syariah (Al-Jauziyah, 1973 in Antonio et al., 2012). In this study, we refer to the Maqashid Syariah concept by Abu Zaharah as a basis our contribution to analyzing human capital drivers and service innovation in Islamic banking. One of the dimensions of the Maqashid Syariah that we use is Tahdizb al-Fard, or educating people. In other words, Islamic Banking has the important role in improving their employee talents through programs, policies and strategies, with emphasis given to the moral values. Islamic Banking performance concerns both financial performance and non-financial performance, including internal process and learning growth (Antonio et al., 2012).

Human capital is a set of competencies, capabilities, experiences, skills, and knowledge obtained through learning (Wadhwa & Parimoo, 2015; Alnajdawi et al., 2019). It is single most important predictor of organizational performance and can be used for the company's value added process through improved productivity (Namasivayam & Denizci, 2006; Bassi & McMurrer, 2006). Human capital is linked fundamentally to education of individuals as the first Maqashid Syariah concept

to improve values of the employees and make them more expertise in their job (Mohammed & Taib, 2015; Mohammed et al., 2008; Ramdhoni & Fauzi, 2020; Amin, 2022). Bassi & McMurrer (2006) also state that human capital cannot be owned by employers. Hence, human capital management is required.

This research examines the relationship between a core set of human capital drivers from Bassi & McMurrer (2005) and service innovation as the organizational performance. These human capital drivers fall into three major variables, namely leadership practices, employee engagement, and workforce optimization. These variables measured as the second order variables to know how they influence human capital drivers. Based on the result (Table 8), leadership practices, employee engagement, and workforce optimization have the positive and significant effects to human capital drivers (H1, H2, and H3 are supported).

The development of human capital itself is a challenge for leaders (Pasamar et al., 2019). Most reseachers have shown that leadership practices could be important antecedent to human capital (Chang et al., 2012; Chang, 2016; Pasamar et al., 2019), which is supported in this study (H1 is supported). Leadership practices could help in the vision creation, direction and coordination, and problem identification and its solution (Agarwal, 2020), They facilitate the innovative climate related to innovative skills (Alnajdawi et al., 2019). It can be related with the result of H4 that the leadership practices has the positive affect toward the service innovation. The effective leadership practices could provide the resources that employees need (Zhu et al., 2005; Pasamar et al., 2019). It means that employees can acquire new knowledges, skills, competences, and experiences as the human capital to foster economic value to firm (Birasnav & Rangnekar, 2009; Pasamar et al., 2019). The result shows that the good service innovation of the employees is the impact of the leader role in providing a good environment to support their employee's knowledge and skill (H8 is supported).

We find that human capital drivers are influenced by employee engagement (H2 is supported). Some studies have shown that employee engagement would be beneficial to for example human capital development (Ozyilmaz, 2020). In this study, employee engagement refers to the capability of Islamic Banking in retaining and engaging employees in their job and organization (Pickett, 2005). The organization needs to concern more about the employees wellbeing. It could include ensuring employees time is well used, evaluating and recognising performance or achievement, and providing opportunity for employee advancement (Pickett, 2005). It is not about the systems or policies alone; it relates to the work environment as well. At the end, the actions of highly engaged employees lead to valuable outcomes (Ozyilmaz, 2020) (H6 and H9 is supported). In this study, the valuable outcomes include idea generation, knowledge sharing, experimentation, and innovative activities.

In this research, Islamic Banking needs to consider the human capital drivers (Namasivayam & Denizci, 2006). Beside leadership practices and employee engagement, workforce optimization also could become determinant of human capital drivers (H3 is supported). Workforce optimization highlights the organizational capability to provide and ensure employees's performance optimalization (Pickett, 2005). It relates to the quality of practices, systems, and all processes for enhancing the employee productivity. The process means that

organization has well-defined business processes. The finding also highlights the role of Islamic Banking in providing a competitive environment to drive the engagement by employees in their activites. In addition, it must involve in improving skills and knowledge of their employees through establishing training and development programs (Poorkiani & Pirmoradi, 2013). Through the workforce optimalization, the employees can acquire and improve the capability to be more innovative in their service activities (H5 and H10 is supported).

Islamic Banking as the service-oriented organization requires human capital drivers for innovation (Storey & Kahn, 2010; Carvache-Franco et al., 2022). The finding shows that human capital drivers have the positive and significant effect on service innovation (H7 is supported). Human capital drivers recognized as a driver of business innovation (Jones & Grimshaw, 2012). Human capital can lead to more prudent and sustainable innovative organizations (Samad, 2020). Good service innovation can attract the customer toward the organization (Ahmad et al., 2014; Khan, 2016). This finding also contributes to the conceptual and measurement development of the human capital drivers as the essential factors to increase innovation activities in the Islamic Banking industry. These essential factors are employee engagement, leadership practices, and workforce optimization. Some studies only focus on identifying factors that have positive influences on the service industry generally, such as Namasivayam & Denizci, (2006), Poorkiani & Pirmoradi (2013), and Carvache-Franco et al. (2022). Meanwhile, other studies also only capture the main role of the human capital in a certain aspect of an organization, such as leadership and organizational learning (Pasamar et al., 2019), work productivity (Widyastuti et al., 2020; Widyastuti & Pogo, 2022), and job engagement (Ozyilmaz, 2020).

V. CONCLUSION AND RECOMMENDATION

In this study, we incorporate a Maqashid Syariah concept into Islamic Banking role in driving human capital to support service innovation. Educating individuals as the dimension of the Maqashid Syariah is the basis how the Islamic Banking can provide the system, process, programs, and policies to achieve service innovation through leadership, employee engagement, and workforce optimization. Bank leaders through their practices can leverage on their communication, inclusiveness, and the system to motivate the employees to be more innovative. For the employee engagement, work design, work commitment, time, and system issues play important roles in building human capital. Islamic Banking practices in work process and arrangement, accountability, and hiring decision also have significant effects on human capital drivers. Service innovation in Islamic Banking sector could be the most important aspect to improve the performance. This finding provides some insight in how the human capital can influence strongly the service innovation in the Islamic Banking sector.

Based on the findings, some practical and theoretical implications can be proposed, as well as recommendations for future studies can be made. This study highlights how human capital drivers, specifically leadership practices, employee engagement, and workforce optimization, promote service innovation in Indonesian Islamic banks. The practical implication is that if a company wants

to increase service innovation, the human capital management strategy should not only focus on carrying out programs or activities that are common in human resource management in general, such as training, establishing policies, and career development. The established human capital management strategy must be able to locate an adequate leadership role, develop good employee relations, and design employment that aligns with corporate goals.

As the service sector, the human capital management will encourage the innovation much needed by Islamic Banking industry in this digital era. This finding emphasizes the optimization of the talent in each of the Islamic Banking office through the role of leaders such as communicating the goals or all relevant information to employees and working together with them. Furthermore, the management needs to make sure the system and policy in the Islamic Banking office could support the working process, such as a clear Standard Operating Procedure (SOP) and training programs.

The use of the Maqashid Syariah concept in the context of Islamic banking management has been thoroughly researched as the foundation as well as the goal of Islamic organizational development. However, previous assessments and standards centre primarily on financial ratios and use mainly secondary data. Only a few studies have investigated the application of the maqasid sharia from the standpoint of banking employees and primary data. This study integrates Islamic viewpoints into human capital management studies and measures them through empirical research. This study covers only the first dimension of the maqashid sharia; future studies can use empirical research to investigate other maqashid sharia dimensions, bringing them closer for implementation in an organization.

This research examines service innovation and human capital drivers in the Islamic banking industry and provides several academic insights. The first insight is that human capital drivers are able to mediate the relationships between variables. This indicates the important role of human capital drivers in improving service innovation. The second insight, from all the hypotheses, is that unexpectedly, leadership practices do not affect human capital drivers. This needs further attention, to reaffirm our finding and to examine what the causes are. Then the next insight is that further empirical research is needed to examine human capital drivers and service innovation using variables from the maqashid sharia, which is the basis for the establishment of Islamic banking.

In response to this study, the regulator, particularly Bank Indonesia, in developing the Indonesian banking industry should focus not only on the macro level but also on the micro level, specifically on helping banks to develop service innovation by encouraging the development of human capital drivers. Further, it is vital to promote the development of educational institutions that will supply human capital to banks. Specifically in boosting Islamic banks, the government should explore the implementation of the maqashid sharia to give Islamic banks a comparative advantage over conventional banks. The adoption of the maqashid sharia in the development of Islamic banks will place Islamic banks in line with its primary aims (raison de entre) of their foundation and place them on the right track.

This study's measurement is based on employee perceptions, so there is a potential for bias, especially when measuring service innovation. Even though this

limitation is addressed by conducting interviews prior to developing instruments, future research can incorporate measurements from both the leader perception who plan the service innovation as well as the customer perception who receive the service.

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