

CUSTOMER'S PERSPECTIVE ON NON-FINANCIAL PERFORMANCE METRICS OF TELECOMMUNICATION COMPANIES: THE EMERGING MARKET CASE

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Abstract

How to cite this paper: Dahal, R. K., Ghimire, B., Rai, B., & Shahi, B. J. (2023). Customer's perspective on non-financial performance metrics of telecommunication companies: The emerging market case. *Journal of Governance & Regulation*, 12(2), 8–18.

<https://doi.org/10.22495/jgrv12i2art1>

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ISSN Online: 2306-6784

ISSN Print: 2220-9352

Received: 20.10.2022

Accepted: 07.04.2023

JEL Classification: L25, L84, M41

DOI: 10.22495/jgrv12i2art1

Organizational performance monitoring and management are crucial in today's fast-paced corporate world. Performance metrics show how much an organization improves. The study's objective was to quantify the non-financial performance metrics (NPMs) in the telecommunication business performance from the customers' perspective. The method of quantitative research and standardized questionnaire was used to obtain primary data from Nepal's renowned and the largest telecommunication corporation cell phone subscriber. The questionnaire contained three general demographics-related inquiries and 32 non-financial performance metrics on a 6-point Likert-type scale. The study gathered a total of 389 responses using a convenience sampling technique. The findings revealed that non-financial performance metrics contributed to around 54% of the success and capabilities of Nepalese telecommunications enterprises. The study resulted in the development of a reliable and valid instrument for measuring the performance of the emerging market for telecommunications services using non-financial performance criteria. The study confirmed Adhikari and Chalise's (2021) conclusions that the Nepalese telecommunication industry's performance assessment has been a significant managerial instrument, evolving to reflect strategic aims by including non-financial performance criteria. Non-financial performance measurements help the company integrate its business performance with its strategy, enhancing market success.

Keywords: Innovation, Organizational Performance, Technology, Telecommunication, Satisfaction

Authors' individual contribution: Conceptualization — R.K.D.; Methodology — R.K.D.; Validation — R.K.D.; Formal Analysis — R.K.D., B.G., B.R., and B.J.S.; Investigation — R.K.D.; Resources — B.G., B.R. and B.J.S.; Writing — Original Draft — R.K.D., B.G., B.R., and B.J.S.; Writing — Review & Editing — R.K.D.; Visualization — B.G., B.R., and B.J.S.; Supervision — R.K.D.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

Business organizations today operate in speedily changing and intensely competitive circumstances. Developing an operative performance measurement and management (PMM) framework is critical in today's constantly evolving and competitive business environment (Yadav & Sagar, 2013). An effective PMM helps managers control their organization's outcomes. Furthermore, PPM systems are essential for organizations since they can provide vital information to make decisions and guide managers to perform in their best interests (Jensen, 2010). Performance metrics can illustrate how well enterprises are enhancing the competencies of their tangible and intangible assets that contribute to their success. Financial performance metrics (FPMs) can be used to evaluate the capabilities of tangible assets, whereas the non-financial performance metrics (NPMs) track the possibilities of intangible assets, including service quality, innovation, social and environmental impact, business processes, employee learning and growth, corporate governance, etc. (Dahal, 2022).

It is not appropriate to assess organizational performance (OP) exclusively on the FPMs in the modern corporate environment. The FPMs can provide insights into past and short-term performance, whereas the NPMs can be used to provide insight into future-oriented and long-term performance (Saunila et al., 2014). Consequently, the existing PMM systems, which are directed by the FPMs, are inadequate to assist managers in recognizing changes in their business environments and capturing success factors (Atkinson et al., 2014). The relevance of the NPMs is growing in modern organizations as an additional source of information for managers. The relevance of the NPMs in the service sector, especially in information and communication technology-based environments, is crucial where their regular operation is more complex than any other type of organization.

The current PPM system adopted by the Nepalese telecommunications industry is based on the notion of financial metrics. OP may be misled if only the FPMs are considered. The study made an effort to address the growing significance of the NPMs that contribute to an organization's value that is not reflected in the balance sheet but is a significant factor of corporate success and long-term profitability (Dahal, 2022). The study's concern was to provide an explanation for why NPMs are required for assessing organizational effectiveness in the field of telecommunication. In this regard, the study's general objective was to quantify NPMs in the telecommunication business's PMM system. The particular objectives were: 1) to recognize the NPMs of telecommunication business from the customers' perspective, and 2) to assess the strength of the NPMs in the OP.

The remarkable growth in the telecommunications sector has amplified the variety of telecommunication services and service providers available to customers (Shukla & Roopa, 2018). The survival of Nepalese telecommunications corporations in a highly competitive environment is a significant issue, and they must create processes that are crucial to achieving operational excellence. Therefore, NPMs are becoming a necessary form of

business disclosure. This study examined the synergistic effects of the NPMs in the PPM system in the telecommunication business sector. Modern business organizations have increasingly relied on NPMs as a source of supplementary information for management (Ahmad & Zabri, 2016). The NPMs are vital to an organization's long-term success because they promote improved operational performance and ensure effective responses to stakeholders' needs (Alshanty et al., 2019). This study examines how NPMs can be used to measure telecommunication businesses' performance to address a gap in the literature. The study focuses on customer, social and environmental, technological and innovation aspects and contributes to the literature by shedding light on the recompense of using NPMs in performance measurement.

The remaining sections of the paper have structured as follows: Section 2 reviews the relevant literature and outlines the study's conceptual framework and hypotheses. Section 3 details the study's materials and methods that have been used to conduct the empirical study on the telecom's business non-financial performance metrics, taking a case of the emerging market. Section 4 demonstrates the outcome and analysis of the study. Section 5 comprises a discussion and analysis of the results. Section 6, as a final section, presents the study's concluding remarks with shortcomings and contributions.

2. LITERATURE REVIEW

The FPMs have traditionally been used to evaluate the OP. Globalization, new technology, and demography are profoundly transforming the business world in response to the increasing complexity of organizations and markets (De Waal, 2007). Consequently, OP metrics should reflect the organization's goals from a dynamic perspective by incorporating NPMs rather than traditional FPMs (Gyemang & Emeagwali, 2020). Ittner et al. (2003) exposed that those organizations believed NPMs offered a variety of advantages, including: 1) managers getting a brief review of their organization's progress prior to the publication of the financial reports, 2) employees gaining superior information about the actions required to achieve strategic objectives, 3) investors receiving more precise information about the organization's overall performance, and so on. Selecting the appropriate measures can create enormous leverage for any organization. For example, Al-Weshah et al.'s (2018) study revealed that NPMs like system quality ($R^2 = 0.467$), customer information quality ($R^2 = 0.292$), system usage ($R^2 = 0.442$) and user satisfaction ($R^2 = 0.492$) have a significant effect on Jordanian telecommunication companies' performance. Likewise, Shukla and Roopa's (2018) study showed that the NPMs like customer satisfaction ($\beta = 0.812$, $p < 0.05$), service quality perception ($\beta = 0.617$, $p < 0.05$), customer perceived network quality ($\beta = 0.698$, $p < 0.05$), brand equity ($\beta = 0.386$, $p > 0.05$), and customer care services ($\beta = 0.535$, $p < 0.05$), positively influences the performance of the Indian telecom service market.

Effective measurement systems allow organizations to precisely enhance and assess

the value exchange with their stakeholders (Napier & McDaniel, 2006). Information and communication technologies (ICTs) have changed how most organizations do business and meet the growing needs of their customers. According to Josee et al. (2016), the promise of ICTs in the telecommunications business has been viewed in terms of its potential to reduce transaction costs, increase customer base, enhance branding and advertising opportunities, facilitate service customization and self-service, and enhance customer relationship management and customer communication. In response to continual changes in the operating environment of ICTs business,

managers of telecommunication service provider companies that wish to remain competitive and provide acceptable levels of service benefit from implementing innovative management practices within their corporations (Khanmohammadi et al., 2015).

2.1. Non-financial performance metrics (NPMs)

There is no authoritative list of NPMs in the prior literature. Therefore, the study classified the customer's perspective of NPMs into three broad groups as follows:

Table 1. The customers' perspective of NPMs

<i>Customer performance metrics (CPMs)</i>	<i>Social and environmental performance metrics (SEPMs)</i>	<i>Technological and innovation performance metrics (TIPMs)</i>
1. <i>Service quality</i> assesses how well a wide range of services is delivered to consumers (Al-Weshah et al., 2018; Shukla & Roopa, 2018).	1. <i>Brand image</i> might positively affect customer expectations, satisfaction, and loyalty and takes precedence in the services industry (Santouridis & Trivellas, 2010).	1. <i>Network and service quality</i> plays a significant role in the organizational performance of telecommunication service providers (Dahal et al., 2020; Saha et al., 2016).
2. <i>Service reliability</i> evaluates the capacity to consistently and precisely deliver the promised services (Wang & Lo, 2002).	2. <i>Social responsiveness</i> refers to being innovative, trustworthy, and professional. Social contribution and customer appreciation comprise the company's image (Vranakis et al., 2012).	2. <i>Signal strength and coverage</i> have always been crucial selection criteria for telecommunications services and have a positive impact on customer satisfaction and brand perception (Dahal et al., 2020).
3. <i>Responsiveness</i> to customers affects consumer satisfaction and corporate performance (Khan, 2010).	3. <i>Social disclosure</i> enhances total business transparency and promotes the optimal allocation of resources (Hossain et al., 2015).	3. <i>Voice quality</i> in telecommunications networks has been an integral part of service qualification (Saha et al., 2016).
4. <i>Customer service</i> increases customer happiness and loyalty (Shukla & Roopa, 2018).	4. <i>Environmental disclosure</i> contributes to an increase in increased organization's value, as a result, enhanced overall performance (Bednarova et al., 2019).	4. <i>Call drop frequency</i> is one of the important network performances that assesses and influences customer loyalty and satisfaction (Saha et al., 2016).
5. <i>Commitment</i> fosters long-term relationships and sustains customer loyalty (Sanchez & Iniesta, 2004).	5. <i>Corporate environmental responsibility</i> entails accepting obligations and disclosing outcomes transparently (Feng et al., 2017).	5. <i>Product/service innovation</i> makes a customer satisfied by turning an idea or invention into a product or service and increasing the value of the organization at a risk that customers are willing to accept (Dotzel et al., 2013)
6. <i>Effective communication</i> establishes strong relationships with customers and contributes to the formation of enduring bonds (Al-Weshah et al., 2018).	6. <i>Electronic waste (e-waste) management</i> encourages organizations to be responsible for self-generating e-waste (Oeztuerk & Marsap, 2018).	6. <i>Process innovation</i> assists an organization in remaining competitive and satisfying consumer needs that significantly affect overall performance (Salunke et al., 2013)
7. <i>Trust</i> positively affects customer retention and loyalty (Lin & Wang, 2006).	7. <i>Protection of natural beauty and biodiversity</i> requires greater protection of natural beauty and biodiversity (Atkinson et al., 2014).	7. <i>Competitive innovation</i> compels rivals to differ and add competitive value to their products/services by adopting innovations and new technology (Sood & Tellis, 2009).
8. <i>Recommending products</i> means referring the products/services to others that boost performance (Atkinson et al., 2014).		8. <i>Marketing innovation</i> seeks to provide customers with value and enhance competitive advantage (Rodríguez-Pose & Crescenzi, 2008).
9. <i>Value-added services</i> provide benefits and promotional offers that distinguish service features from competitors (Atkinson et al., 2014).		

2.2. Non-financial organizational performance metrics (NOPMs)

Performance metrics are quantitative measures used to assess an organization's performance in relation to a specific target or expected outcome (Needles et al., 2011). The NPMs are not derived from an organization's financial statements, unlike

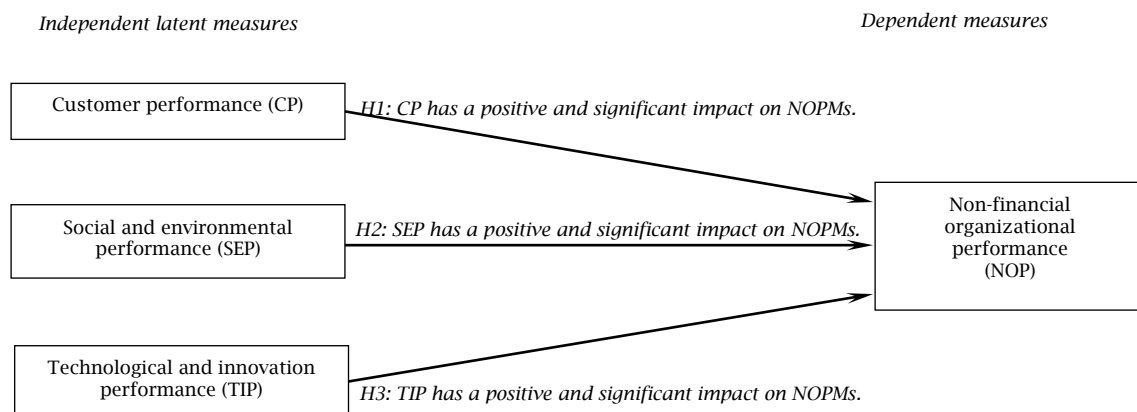
the FPMs. Comparatively, the NPMs, also known as qualitative performance evaluation metrics, are more subjective than financial indicators. The NPMs are often applied when specific circumstances and factors are present. In this regard, customers' perspective of the non-financial organizational performance metrics (NOPMs) was described as follows:

Table 2. The customers’ perspective of NOPMs

<i>Measures</i>	<i>Theme</i>
1. Customer satisfaction	A customer’s satisfaction derives from a belief that the product/service met their performance expectations better than competitors (Al-Weshah et al., 2018; Atkinson et al., 2014; Shukla & Roopa, 2018).
2. Customer retention	Customer retention has a financial influence on the business, assuming that acquiring new customers is more costly than maintaining old ones (Atkinson et al., 2014).
3. Customer loyalty	Companies consider customer loyalty as a competitive advantage (Lin & Wang, 2006), and is measured by repurchase intention, product recommendation, price tolerance, customer trust, and other factors (Kim & Yoon, 2004).
4. Customer acquisition	Organizations must help customers acquire new buying behaviors by reminding them of the value of their purchases and encouraging them to continue purchasing those products in the future (Rahman et al., 2011).
5. Social performance	An organization’s social reputation can promote its performance and positively affect customer satisfaction and loyalty (Rahman, 2014). Social responsiveness and reputation enhance competitiveness (Gupta, 2002).
6. Environmental performance	Environmental performance demonstrates how a business operates and offers managers the environmental data required to make decisions for future enhancements (Williams, 1997).
7. Technological performance	Technological advancements equip business players with new service opportunities and challenges to offer consumers unique services not only to keep long-term customer relationships (Yeh & Fu, 2013) but also to differentiate themselves from their competitors (Dahal et al., 2020).
8. Innovation performance	Innovation performance is the transformation of an idea or invention into a consumer-purchased product or service that benefits its providers (Rahman, 2014).

The study developed the following structural framework and hypotheses based on a review of previous studies:

Figure 1. Conceptual framework and hypotheses of the study



3. RESEARCH METHODOLOGY

The study adopted a quantitative research technique to examine its primary concerns and themes. A standardized survey questionnaire was employed to collect the required data from Global System for Mobile (GSM) subscribers of Nepal Telecom. Nepal Doorsanchar Corporation Ltd., commonly recognized as NT (Nepal Telecom), is a renowned corporation in the field of telecommunications and provides the best possible services throughout Nepal. The survey instrument utilized in the study was designed as depicted in Table 3.

The questionnaire’s final four dimensions focused on the NPMs, and a series of closed-ended items were designed to elicit the necessary information from respondents. All the NPMs were measured on a 6-point Likert-type scale from 1 = strongly disagree to 6 = agree strongly. A convenience sampling approach was used to select

respondents who comprehend the relevance of NPMs to business success. By conducting a self-administered field survey in Kathmandu Valley, the capital city of Nepal, from January to June 2022, 389 correctly filled-up responses were collected. Table 4 offers an overview of the respondents’ general descriptive statistics.

To assess the level of internal consistency among the NPMs, Cronbach’s alpha has been used. In accordance with Hair et al. (2006), all latent variables’ alpha values, as presented in Table 3, exceeded the cut-off of 0.70. In addition, the study conducted the Harman single-factor test, as recommended by Podsakoff et al. (2003), in order to identify the presence and severity of common method bias (CMB). The single component of all 32 observed NPMs explained just 28.427 % of the variation, which was below the cut-off value of 0.5, as recommended by Cho and Lee (2011).

Table 3. Derivation of the questionnaire with reliability statistics

Section	Theme	Observed variables	No	Alpha
A	General demographics of the respondents	GD_1_Occupation	3	-
		GD-2_Sex		
		GD_3_Age group		
B	Customer performance metrics (CPMs)	GD_1_Occupation	9	0.807
		GD-2_Sex		
		GD_3_Age group		
		GD_1_Occupation		
		GD-2_Sex		
		GD_3_Age group		
		GD_1_Occupation		
		GD-2_Sex		
		GD_3_Age group		
C	Social and environmental performance metrics (SEPMs)	SEPMs_13_Brand image	7	0.779
		SEPMs_14_Social responsiveness		
		SEPMs_15_Social disclosure		
		SEPMs_16_Environmental disclosure		
		SEPMs_17_Corporate environmental accountability		
		SEPMs_18_Electronic waste management		
D	Technological and innovation performance Metrics (TIPMs)	SEPMs_19_Protection of natural beauty and biodiversity	8	0.796
		TIPMs_20_Network and service quality		
		TIPMs_21_Signal strength and coverage		
		TIPMs_22_Voice quality		
		TIPMs_23_Calls drop		
		TIPMs_24_Product/service innovation		
		TIPMs_25_Process innovation		
		TIPMs_26_Competitive innovation		
E	Non-financial organizational performance metrics (NOPMs)	TIPMs_27_Marketing innovation	8	0.817
		NOPMs_28_Customer satisfaction		
		NOPMs_29_Customer retention		
		NOPMs_30_Customer loyalty		
		NOPMs_31_Customer acquisition		
		NOPMs_32_Social performance		
		NOPMs_33_Environmental performance		
		NOPMs_34_Technological performance		
NOPMs_35_Innovation performance				

Table 4. Respondents' general descriptive statistics

Gender	No	%	Occupation	No	%	Age group	No	%
Female	188	27.1	Service holder	183	47.0	up to 30 years old	131	33.7
Male	201	72.9	Students	149	38.3	31 to 50 years old	195	50.1
			Others	57	14.7	over 51 years old	63	16.2
Total	389	100.0		389	100.0		389	100.0

Convergent validity and discriminant validity test were conducted to evaluate the validity of the study's variables. In order to assess the convergent validity, construct reliability (CR) and average variance extracted (AVE) have been used. While computing the value of CR and AVE, individual scale items with standardized regression weights exceeding 0.50 were considered, as suggested by Hair et al. (2006).

The observed NPMs: *CPMs_4_Service quality*, *CPMs_9_Efficient communication*, *CPMs_10_Trust*, *CPMs_11_Recommending products*, and *CPMs_12_Value added services* under the CP construct; the NPMs: *SEPMs_13_Brand image* under the SEP construct;

the NPMs: *TIPMs_24_Product/service innovation*, *TIPMs_25_Process innovation*, *TIPMs_26_Competitive innovation*, and *TIPMs_27_Marketing innovation* under the TIP construct; and the NPMs: *NOPMs_32_Social performance* and *NOPMs_33_Environmental performance* under NOP construct were disregarded because their individual scale item standardized regression weights were less than 0.50. Based on the retained NPMs, the calculated values of CR and AVE exceeded the respective suggested cut-off values (as presented in Table 5), satisfying the convergent validity of the variables. The details of the validity insights of the NOP model are demonstrated in Figure 2 and Table 5.

Figure 2. NOP model validity insights

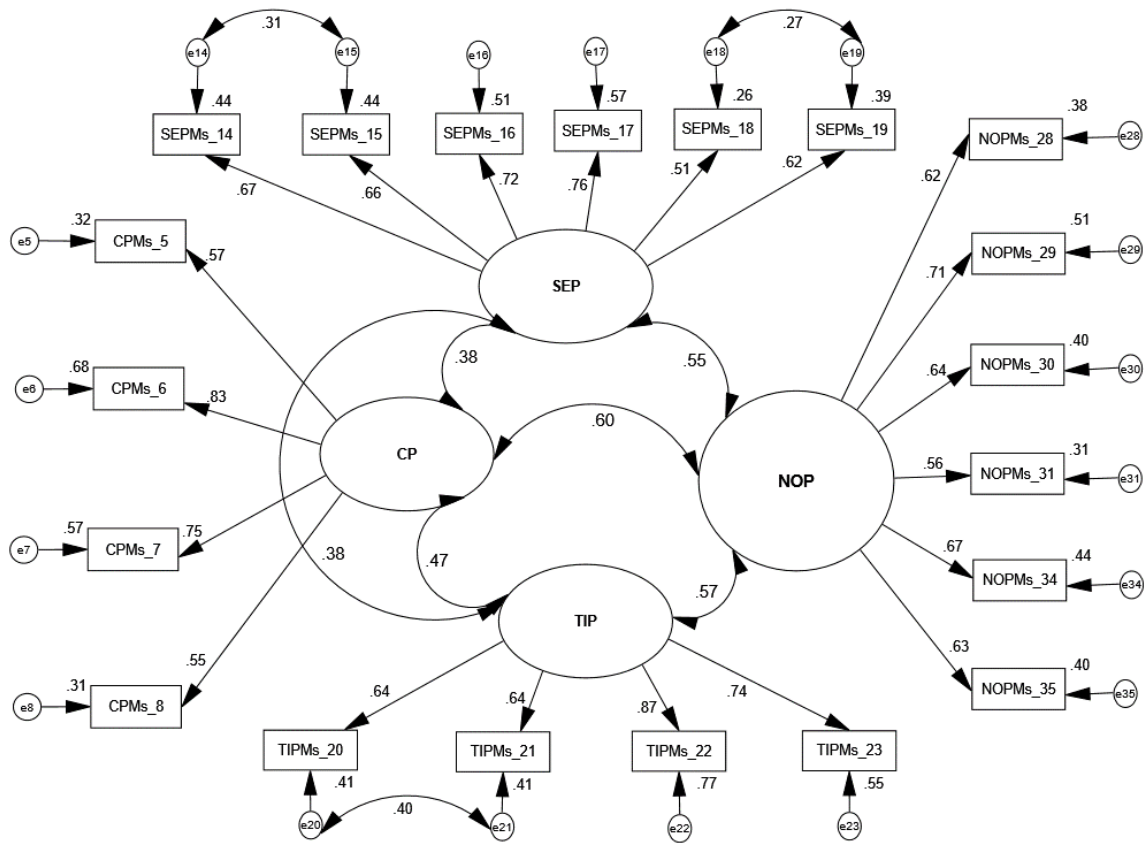


Table 5. Validity statistics

Particulars	Convergent validity		Discriminant validity			
	CR	AVE	Square root of AVE (in bold) and inter-construct correlations			
			CP	SEP	TIP	NOP
CP	0.778	0.475	0.689			
SEP	0.825	0.443	0.382	0.666		
TIP	0.820	0.537	0.469	0.380	0.736	
NOP	0.809	0.415	0.597	0.552	0.568	0.646
Cut-off value:	≥ 0.7	≥ 0.40	AVE's square root > Inter-construct correlations			
Suggested by:	Fornell and Larcker (1981)	Bagozzi and Baumgartner (1994)	Fornell and Larcker (1981)			

As shown in Figure 2 and Table 5, there was no evidence of multi-collinearity since inter-construct correlations did not exceed Meyers et al.'s (2006) suggested cut-off value of 0.7. Similarly, according to Fornell and Larcker's (1981) standard for discriminant validity statistics, the AVE's square root (shown in bold in Table 5) was greater than inter-construct correlations and indicated that the constructs were dissimilar. Such validity insights allowed us to proceed with further analysis with 20 observed and four latent variables.

4. OUTCOMES AND ANALYSIS

The study employed structural equation modeling (SEM) and path analysis (PA) to assess

the importance of the proposed paths. The NOP model was assessed by 20 observed NPMs within four latent measures, as presented in Figure 3, along with model fit indices, and the key parameter estimates are presented in Table 7.

The results from the testing hypotheses indicated that the CP metrics were the leading contributor to the NOP ($\beta = 0.343, p < 0.01$), followed by the SEP metrics ($\beta = 0.311, p < 0.01$), and the TIP metrics ($\beta = 0.287, p < 0.01$). As shown in Figure 3, the model's square multiple correlations of 0.54 revealed the percentage of the variable in the dependent variables that the independent variable collectively explained.

Figure 3. NOP model

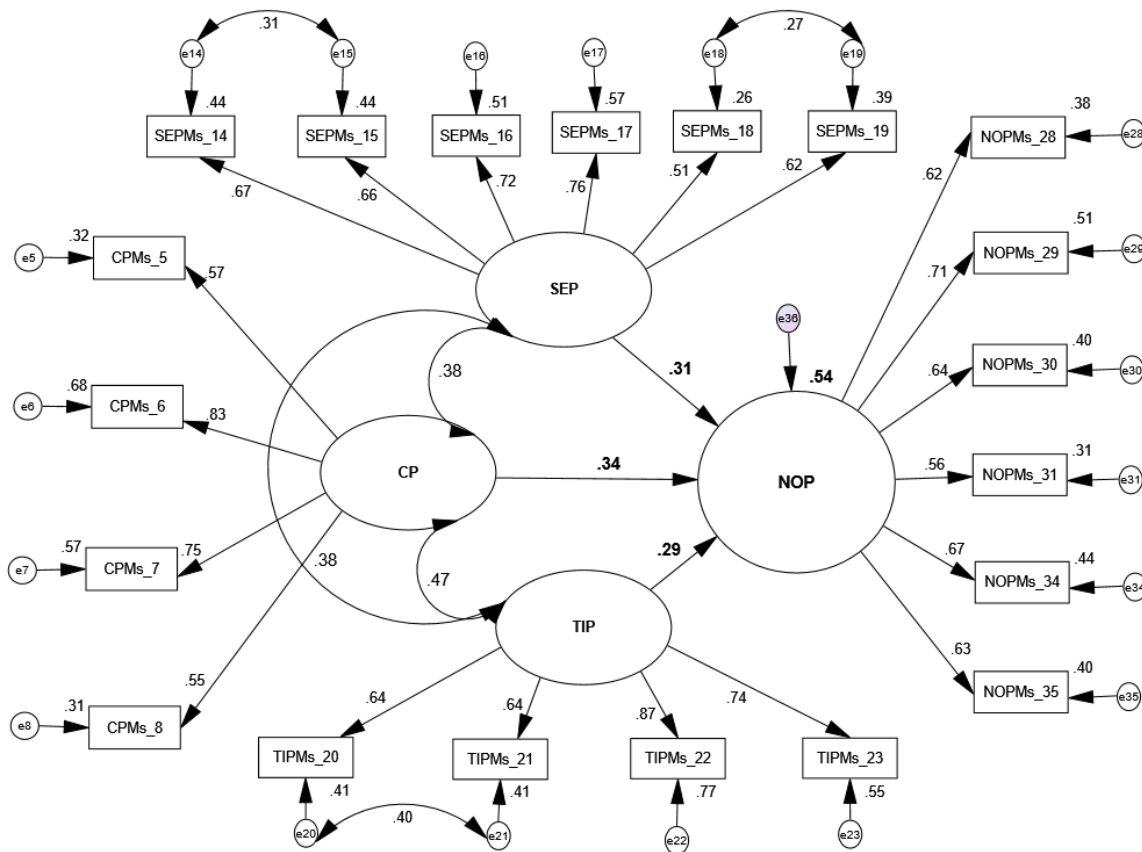


Table 6. NOP model fit measures

Model fit measures	Cut-off value	Recommended by	Model value
Chi square (χ^2)	Smaller the better	Wan (2002)	334.260
Probability (p)	> 0.05	Wan (2002)	0.000
Normed chi square [χ^2/df]	≤ 3.00	Kline (2005)	2.076
Standardized root mean-square residual (SRMR)	≤ 0.08	Hu and Bentler (1999)	0.064
Root mean square error of approximation (RMSEA)	≤ 0.08	Hu and Bentler (1999)	0.053
RMSEA associated p-value (PCLOSE)	≥ 0.05	Garson (2019)	0.283
Goodness of fit index (GFI)	≥ 0.90	Bagozzi and Yi (1988)	0.919
Adjusted goodness of fit index (AGFI)	≥ 0.80	Bagozzi and Yi (1988)	0.895
Relative fit index (RFI)	≥ 0.80	Hair et al. (2006)	0.871
Comparative fit index (CFI)	≥ 0.90	Hu and Bentler (1999)	0.940
Normed fit index (NFI)	≥ 0.80	Bentler and Bonnet (1980)	0.891
Tucker Lewis index (TLI)	≥ 0.90	Hu and Bentler (1999)	0.929

Table 7. Key parameter estimates the NOP model

Hypotheses	Unstandardized regression weight	Standardized regression weight	Standard error	Critical ratio	p-value	Remarks
H1: CP → NOP	0.394	0.343	0.081	4.879	***	Accepted
H2: SEP → NOP	0.287	0.311	0.059	4.864	***	Accepted
H3: TIP → NOP	0.224	0.287	0.049	4.550	***	Accepted

Note: *** = Significant at 0.01 level.

5. DISCUSSIONS

The incorporation of multiple performance metrics, including the NPMs in OP, has been acknowledged since the 1990s. Literature showed that the exclusive use of the financial metrics-based performance system in today's businesses has a number of drawbacks, such as: 1) forcing managers to modify the reporting facts (Eccles, 1991), 2) furnishing deceptive information for decision-making (Ghalayini et al., 1997), 3) encouraging short-term thinking and sub-optimization (Olsen et al., 2007),

and so on. Financial data alone was mostly immaterial for the overall performance evaluation of telecommunication businesses (Dahal, 2022), and the noise of financial performance inclined the selection of performance metrics. So, the study examined the predictive capability and the value significance of the NPMs in the Nepalese telecommunication industry.

The study's literature review identified 32 observable variables within four constructs as the NPMs. The study did not acknowledge the five observed NPMs under the CP construct despite

significance in prior research like service quality (Shukla & Roopa, 2018), efficient communication (Al-Weshah et al., 2018), trust (Lin & Wang, 2006), recommending products (Atkinson et al., 2014), and value-added services (Atkinson et al., 2014). Contrary to the findings of Santouridis and Trivellas's (2010), the brand image under the SEP construct was not recognized as the NPMs. In addition, the observed NPMs such as product/service innovation (Dotzel et al., 2013), process innovation (Salunke et al., 2013), competitive innovation (Sood & Tellis, 2009), marketing innovation (Rodríguez-Pose & Crescenzi, 2008) under the TIP construct and social performance (Gupta, 2002), environmental performance (Williams, 1997) under NOP construct were also not acknowledged as the NPMs in the study. Therefore, the study's outcome was based on 20 NPMs within four constructs.

The latent measure CP was assessed from four observable NPMs: service reliability ($\beta = 0.573$, $p < 0.01$), responsiveness ($\beta = 0.834$, $p < 0.01$), customer service ($\beta = 0.752$, $p < 0.01$), and commitment ($\beta = 0.554$, $p < 0.01$) yielding CR = 0.778 and AVE = 0.475. As consistent with Rahman's (2014) study, the study showed that 'responsiveness' (the company promptly responds to the customers' issues) and 'customer service' (the company's customer services are good) were the key NPMs. The latent measure SEP was assessed from six observed NPMs: social responsiveness ($\beta = 0.673$, $p < 0.01$), social disclosure ($\beta = 0.662$, $p < 0.01$), environmental disclosure ($\beta = 0.719$, $p < 0.01$), corporate environmental accountability ($\beta = 0.761$, $p < 0.01$), electronic waste management ($\beta = 0.513$, $p < 0.01$), and protection of natural beauty and biodiversity ($\beta = 0.624$, $p < 0.01$) yielding CR = 0.825 and AVE = 0.443. Corporate reputation differentiates the company from its competitors (Dahal, 2022; Gupta, 2002). Previous studies showed that 'social responsiveness' and 'disclosure' were of utmost importance in the services industry, particularly for businesses offering minimal uniqueness and competing in a highly competitive environment, such as telecommunication businesses (Santouridis & Trivellas, 2010). In addition, studies (Dahal, 2022; Gupta, 2002) showed that environmental disclosure enhances public awareness and the organization's reputation, resulting in an overall improvement in OP.

The latent measure TIP was assessed and evaluated from four observable NPMs: network and service quality ($\beta = 0.664$, $p < 0.01$), signal strength and coverage ($\beta = 0.643$, $p < 0.01$), voice quality ($\beta = 0.879$, $p < 0.01$), and calls drop ($\beta = 0.744$, $p < 0.01$) yielding CR = 0.820 and AVE = 0.537. The technological and innovation performance gives business people skills, new service issues, and seeking chances to offer customers innovative facilities that lead to better organizational performance (Yeh & Fu, 2013). It also makes itself different from other rivals and increases competitiveness (Dahal et al., 2020). Signal strength and network coverage have always been primary criteria for choosing a mobile phone service provider. These are the relevant considerations to look at when assessing the quality-of-service performance and figuring out the overall customer satisfaction and OP (Rahman et al., 2011). Information and technology promote innovation in

a competitive marketplace (Sood & Tellis, 2009), and improvising, modifying, augmenting or transforming current trade channels using technology can minimize transaction costs, resulting in the improved OP (Rodríguez-Pose & Crescenzi, 2008).

The latent measure NOP, as the dependent variable, was assessed from six observed NPMs: customer satisfaction ($\beta = 0.623$, $p < 0.01$), customer retention ($\beta = 0.713$, $p < 0.01$), customer loyalty ($\beta = 0.642$, $p < 0.01$), customer acquisition ($\beta = 0.571$, $p < 0.01$), technological performance ($\beta = 0.669$, $p < 0.01$), and innovation performance ($\beta = 0.631$, $p < 0.01$) yielding CR = 0.809 and AVE = 0.415. Customer satisfaction results in a lower cost of a future transaction, long-term customer retention, and higher loyalty, and increases its reputation (Anderson et al., 1994), ultimately leading to better OP. Studies have shown that a high level of customer satisfaction intensifies customer retention and repurchase intents (Al-Weshah et al., 2018; Shukla & Roopa, 2018). Customer retention has a financial impact on a business that considers acquiring new customers more expensive than keeping existing ones and enhances market share growth and reduces cost (Atkinson et al., 2014). Retention and acquisition of new consumers are utilized to increase revenue and market share. Therefore, this study also supported the earlier studies' findings that better customer performance is considered a competitive advantage for businesses and boosts organizational revenue and growth. Technological and innovation-based metrics have always been essential for evaluating the performance of mobile phone service providers. In accordance with earlier research (Dahal et al., 2020; Saha et al., 2016), the technological measure is one of the relevant NPMs for assessing the service performance of Nepalese mobile phone services. Advancements in technology lead to service innovations (Huang, 2011) and service innovations satisfy clients by transforming an invention or idea into a product or service that improves OP (Dotzel et al., 2013). All of the findings and discussions of the study agree with the findings of Adhikari and Chalise (2021) in that performance assessment has been a significant managerial tool in Nepal's telecommunications industry, undergoing revisions and updates in response to shifts in the sector's strategic goals by incorporating the NPMs.

6. CONCLUSION

Performance metrics (non-financial or financial) help deepen stakeholders' comprehension of firm success and development. The NPMs make enterprise trends transparent and aid in holding management accountable. Despite this, the expanding body of knowledge about organizational performance is somewhat fragmented; multiple points of view are espoused, but there is no universally acknowledged method for bringing these ideas together, and there is very little empirical research in this area. The selection of performance metrics is one of the most critical challenges faced by enterprises globally. As directed by the study's first objective, the study has recognized and validated 20 relevant NPMs of telecommunication business from the customers' perspective and grouped them into four constructs, viz. CP, SEP, TIP, and NOP. The study

assessed the strength of the NPMs in the NOP in light of the final objective. The findings revealed that the CP metrics ($\beta = 0.343$, $p < 0.01$) were the most influential, followed by the SEP metrics ($\beta = 0.311$, $p < 0.01$) and the TIP metrics ($\beta = 0.287$, $p < 0.01$), which accounted for around 54% of their contribution to the NOP in the Nepalese telecommunications industry.

The study led to the development of a valid and reliable tool for evaluating the performance of the emerging telecommunication service market employing NPMs. The study looked at customers' awareness and attitudes towards the various NPMs and how the attitude affected their intention to perform it. The researchers believed that these attitudes are socially formed and affected by innovation and technology, that individuals may perceive different situations differently, and that their perceptions of others' perspectives may likewise vary. Useful measurement of NPMs in OP offers the skill that effectively concentrates all efforts on enhancing the associated linkages to accomplish bottom-line improvement. The NPMs can instigate the managers to take initiatives that benefit the businesses in the long run. Consideration of NPMs in OP enables the organization to match its business performance with its strategy, hence enhancing its market success. Furthermore, the NPMs are strongly related to an innovation-focused strategy, the implementation of strategic quality initiatives, and industry regulation.

The study of NPMs on OP has been basically a non-theoretically, multi-faceted phenomenon based on dubious assumptions about human behavior. It coped with a single-dimensional metric measuring NPMs in performance measures of the

Nepalese telecommunication industry, although traditional FPMs have a significant role in the PMM. As a result, the study turned to symbolic research rather than making an effort to be exhaustive and provided limited information on stakeholders' (i.e., customers') viewpoints. This study focused only on GSM service; however, the Nepalese telecommunication operator companies provide a broad range of technologies and services. A similar analysis can be directed in other countries to comprehend better learning in various public societies and levels of development. Future exploration is urged to extend or replicate the study considering various service industries in Nepal or any other country by covering broader groups of stakeholders. In addition, future researchers are encouraged to concentrate on further testing and refining new models by employing the econometric method, the least square method, and the EViews software package to enhance the work's readability.

The study has explored the applicability of the NPMs in the PMM in the Nepalese telecommunication industry and developed a subjective framework for the Nepalese scenario. The framework integrates its new measurement system into a management process that communicates the strategy to action, which is the performance improvement journey. This study offers a new empirical indication of the practice of NPMs and subsidizes a better comprehension of the contingency approach in the situation of the PMM within the information and communication technology environment of Nepal. The researchers believed that the study's findings would be relevant to Nepalese and other similar socio-economic environments.

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