

Article

Mediating Effects between Perspectives in Strategy Maps

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Abstract: Many researchers have highlighted the importance of strategy maps for improving organizational performance and providing an entire organization with a cognitive representation of its strategic objectives. However, arguing that strategy maps do not assign weight to each perspective, other researchers have generated weighted strategy maps and used various optimization models to highlight the most important perspective. In this study, I argue that organizations should understand all the causal links in a strategy map and explore paths toward improvement rather than focusing on just one perspective. To that end, I analyse all the causal relationships in the strategy map developed for a major postal service in Saudi Arabia and identify two principal mediating relationships: (1) the relationship between the learning and growth perspective and the customer perspective as mediated by the internal business process perspective and (2) the relationship between the internal business process perspective and the financial performance perspective as mediated through the customer perspective.

Keywords: balanced scorecard; strategy map; structural equation modelling; mediating effect

1. Introduction

Organizations routinely seek to improve their performance by serving customers more effectively and thus improving profitability. However, in endeavouring to realize greater profits, organizations may take only a few factors into account or may engage in change-management processes that purport to be comprehensive but are limited in scope. In the present study, the focus is on investigating the potential of the balanced scorecard (BSC) approach to describing organizational performance and discovering opportunities for meaningful, effective change that encompasses multiple organizational functions and concerns.

The study focus is a logistics industry organization, a national postal service, in Saudi Arabia selected as an instructive example in light of Saudi Arabia's relatively recent efforts to reduce its economic dependence on oil. In this context, Vision 2030, announced in 2016, includes a strategic focus on exploiting the country's geographical location. As a result, the Saudi logistics sector has become critically important to decision makers and the government has introduced multiple plans to advance this sector. In particular, given that the infrastructure of Saudi Arabia is generally held to be insufficient such that the challenge of transforming it has yet to be met, the development and implementation of a sound and feasible strategic plan to improve the logistics industry is viewed as the backbone of Vision 2030. For this reason, the government's plans focus on strengthening the logistic competencies of agencies in this sector. It is in this context that the research presented herein was conducted.

The study focuses on two related questions explored through several hypotheses. How and to what extent can all four of the perspectives—learning and growth, internal business process, customer, financial performance—comprising the BSC approach be used to advance organizational performance?

What are the relationships between these perspectives and can considering them in a holistic way be beneficial to business outcomes?

One of the most well-known tools used in strategic management is the balanced scorecard (BSC) introduced by [Kaplan and Norton \(1992\)](#). In fact, the BSC has gained recognition in both academia and industry. Many organizations, for profit, non-profit and public-sector, have embraced the BSC concept as constituting an effective method within an overall strategic management system and, therefore, as a way to improve performance. There is no doubt that the BSC can be used to transform the business strategies of any organization into initiatives with manageable objectives that can be measured using key performance indicators (KPIs)—including by focusing simultaneously on the financial perspective and multiple non-financial perspectives (i.e., the customer, internal business process and learning and growth perspectives).

[Kaplan and Norton \(1996, 2001\)](#) suggest that the unique structure of the BSC means that it can be used as a strategic tool to guide organizations toward achieving sustained long-term profitability. Further, [Kaplan \(2012\)](#) noted that the BSC model can provide rich information about any organization type including in regard to determining the perspectives most appropriate to a given organization. Another concept associated with the BSC is the strategy map ([Kaplan and Norton 2004b](#)), a visual framework that prescribes several cause-and-effect relationships between various aspects of an organization's strategy in concert with the integration of BSC perspectives. Strategy maps are used to foster employees' understanding of their organization's strategies and on this basis to involve the entire organization in pursuing and supporting the organization strategically. Many researchers ([Banker et al. 2011](#); [Cheng and Humphreys 2012](#)) have indicated that the use of strategy maps enables employees to understand how with their organization's objectives is linked to organizational strategy.

Many studies focus mainly on assessing the implications of using a strategy map to assist managers in more effectively set strategic objectives and/or to identify the measures in the strategy map on which managers should focus. However, there is only limited research on testing the causal links in the BSC strategy map and the interdependence between these perspectives. [Thakkar et al. \(2006\)](#) and [Wu \(2012\)](#) explored several interrelationships between BSC perspectives and showed that feedback relationships exist among them.

In the present study, all the causal relationships (both direct and indirect) within the BSC perspective are investigated in order to help managers further their understanding of how these perspectives are connected and whether a feedback relationship is in operation, as suggested by [Thakkar et al. \(2006\)](#) and [Wu \(2012\)](#). Factor analysis is used to determine the reliability of the instrument used herein and structural equation modelling (SEM) is used to determine the significance of the paths in the BSC strategy map. The focal example investigated is the Saudi Postal Corporation, an organization in the logistics industry that depends on efficient operations to handle postal services in Saudi Arabia.

The importance of this study lies in the fact that understanding all the direct and indirect causal relationships between the BSC perspectives has the potential to deepen the field's understanding of how these perspectives relate to each other. On this basis, paths to improved operations within organizations can be identified and pursued in a coordinated way instead of with a focus on only one or a few perspectives.

The rest of the paper proceeds as follows: In Section 2, an account of the theoretical background and the development of the hypotheses is presented. In Section 3, the research methodology, including the data collection and participants, are discussed along with variable measures. The focus of Section 4 is the main findings, including the reliability measures of the instrument used and the results of the structural model. Concluding remarks and a discussion of the practical implications of the results are presented in Section 5.

2. Literature Review and Hypothesis Development

2.1. Theoretical Background

Researchers have explored the use of the BSC to enhance the strategic performance of organizations in many sectors, including the public sector (Alhyari et al. 2013; McAdam et al. 2002), in the context of small and medium enterprises (SMEs) (Falle et al. 2016; Singh et al. 2018; Tsalis et al. 2013), higher education (Alani et al. 2018; Nayeri et al. 2008; Tohidi et al. 2010) and non-profit organizations (Aidemark 2001; Martello et al. 2016).

In respect to strategy maps, many researchers have indicated that the use of strategy maps enables employees to become more familiar with how their organization's objectives are linked to organizational strategy. Banker et al. (2011) designed an experiment in which the participants were required to evaluate their manager's performance for possible promotion. Each participant was assigned to one of two groups, whereby participants in one group were provided with a strategy map and participants in the other were provided with a narrative description of the strategy. The results showed that the participants provided with a strategy map assigned greater weight to measures linked to strategy in evaluating the manager's performance than did the participants in the other group. Similarly, Cheng and Humphreys (2012) found that when provided with strategic objectives presented as a strategy map, the participants formed cognitive representations to interpret external information, which they incorporated into their strategic judgments.

Many other studies also highlight the importance of a strategy map in improving performance including by involving the entire organization (De Carlo et al. 2008; Gomes et al. 2013; Hu et al. 2017; Lilian Chan 2009). However, Wu (2012) argued that most of these studies focus on a generic framework of the BSC strategy map, which may not be a good fit for all the different kinds of organizations using the strategy map concept. Therefore, Wu (2012) developed the Decision Making Trial and Evaluation Laboratory (DEMATEL) to establish a visualized strategy map with logical links to use in identifying critical BSC perspectives. Wu's DEMATEL results suggest that the customer perspective is the most critical of the four BSC perspectives (learning and growth perspective, internal process perspective, customer perspective and financial perspective) in improving performance. In addition, according to Wu (2012), as each organization is unique in terms of strategy and the measures used to reflect performance, the BSC strategy map should provide a basis for prioritizing those measures. In this way, the BSC strategy map would help bank managers invest resources in the areas that are central to the organization's strategy and in the areas of strategic importance that need the most improvement.

To prioritize the perspectives incorporated into the BSC strategy map, Pérez et al. (2017) employed the Fuzzy Analytic Hierarchy Process (FAHP) analysis to create a weighted strategy map. Based on a case study of a software factory that employed FAHP to determine the weights for BSC measures and KPIs, their results suggest that the factory focused primarily on the customer perspective and that customer satisfaction was the most important KPI used to evaluate performance. Similar results were reported by Valmohammadi and Sofiyabadi (2015), who drew on fuzzy DEMATEL analysis to construct a strategy map for the Iranian automotive industry.

2.2. Development of the Hypotheses

According to social exchange theory, organizations that provide favourable working conditions to their employees realize greater productivity than do organization that provide less favourable working conditions (Flynn 2005; Wayne et al. 1997). Adeinat and Kassim (2019) showed that improving the internal quality of the organization (job design, effective training, management support and rewards and recognition) improves employee satisfaction, which in turn increases employee productivity. However, mere working conditions will not suffice. Employees need to be provided with proper training in order to ensure that they are equipped with all the skills, knowledge and competencies needed to perform their jobs efficiently. In the logistics industry, Kucukaltan et al. (2016) found that educated employees, a key indicator of internal business processes, were classified as the most

important indicator of the competitiveness of logistics companies. Thus, improved learning and growth of employees is expected to improve performance in terms of the internal business processes perspective. These observations lead to the first hypothesis:

H1. *The learning and growth perspective has a positive direct effect on the internal business process perspective.*

When business processes improve, employees will be able to deliver superior quality that will yield a higher level of customer satisfaction. Results reported by Lee et al. (2017) show that the productivity of frontline employees in the service sector has a significant impact on the extent to which those employees are engaged in their work and thus on customer satisfaction. In addition, Heskett et al.'s (1994) service profit chain model shows that high service quality leads to high level of customer satisfaction and loyalty.

Another improvement to internal business processes that is key in the logistics industry is quick response rates. Lan et al. (2016) found that companies with a quick response rate and flexible logistic strategy have a higher level of customer satisfaction than do companies that lack these qualities. Similarly, Zhang et al. (2005) showed that organizations with flexible logistic capability had a strongly positive impact on customer satisfaction. These observations lead to the second hypothesis:

H2. *The internal business process perspective has a positive direct effect on the customer perspective.*

The outcomes of customer satisfaction in different settings have been investigated in a number of studies (Adeinat and Kassim 2019; Yee et al. 2010). Overall, the results show that an improved level of customer satisfaction leads to greater profits for a company, as satisfied customers are likely to purchase frequently from the same service provider. Vargo and Lusch (2004) argued that in a service-centred dominant logic the value of the service is defined by the consumer. Thus, the service provider should take into account the factors that are essential to keep customers satisfied in order to drive profitability. In fact, according to multiple studies, customer satisfaction and loyalty can increase via repurchases and referrals, which yield organizational profitability (see Maritz and Nieman 2008; Yee et al. 2010). Therefore, increased level of customer satisfaction will improve an organization's financial performance. These observations lead to the third hypothesis:

H3. *The customer perspective has a positive direct effect on an organization's financial perspective.*

The framework of the strategy map explores only the direct cause-and-effect relationships between the four perspectives of the BSC. However, in some studies, researchers have argued that other interrelationships between BSC perspectives can be found (see Huang et al. 2009; Thakkar et al. 2006; Wu 2012). Zahoor and Sahaf (2018) investigated all the causal linkages in the BSC of Indian retail banks and showed that sequential dependency among the BSC perspectives does exist. These observations lead to these two hypotheses:

H4a. *The internal business process perspective mediates the relationship between the learning and growth perspective and the customer perspective.*

H4b. *The customer perspective mediates the relationship between the internal business process perspective and the financial performance perspective.*

3. Research Methodology

3.1. Data Collection and Participants

One of the oldest service institutions in Saudi Arabia, the Saudi Postal Corporation both provides and regulates the country's postal service. The postal service in Saudi has gone through significant development in recent years. In particular, in June 2002, the Saudi Postal Corporation became a public institution, operating in accordance with the philosophy of the private sector. With this transformation,

the Saudi Postal Corporation opened a postal processing centre in every region of Saudi Arabia with three main centres in Riyadh, Jeddah and Dammam.

One of these three main centres, the Jeddah Post Processing Centre specializes in handling registered mail, consignments, e-commerce shipments and other mail to which the conditions of registered mail apply. This type of mail has a tracking number that the customer can use to follow a given piece of mail as it makes its way through Saudi Post locations to his/her door at a price that is competitive with the cost of other private carriers in the country for a similar service. The centre has eleven departments, including administrative departments and field sections, as well as a technical section focused on maintaining the postal machinery. As of 2018, the Jeddah Treatment Centre employed a total of 201 people.

In summer 2018, to collect data for the present study, a questionnaire was distributed to all the employees at the Jeddah Treatment Centre and 101 complete questionnaires were returned. The respondents represent a diverse sample in terms of educational level, work experience and age. As shown in Table 1, most of the respondents were older than 35 years of age (70.6%), held a diploma or a bachelor's degree (52.5%) as their highest level of formal educational attainment and had more than 20 years' work experience (47.5%).

Table 1. Demographic Profile of the Total Sample.

	Frequency	Percent
Gender		
Male	101	100.0
Age		
25–29	4	4.0
30–34	26	25.
35–39	33	32.7
Above 40	38	37.6
Highest Educational Level		
High school	35	34.7
Diploma	25	24.8
Bachelor's degree	28	27.7
Graduate Studies	9	8.9
Work Experience		
Less than 5 years	7	6.9
5–10 years	2	2
11–20 years	20	19.8
More than 20 years	48	47.5

3.2. Variables Measures

The measures used in this study are based on Kaplan and Norton's (1992) BSC model. In the logistics industry, researchers typically develop performance indicators based on the context of the focal companies. Kucukaltan et al. (2016) surveyed previous research carried out in the logistics industry and used the Analytic Network Process (ANP) method to prioritize the key indicators in each perspective, in which they identified the most important indicators for each of the four perspectives of the BSC in the logistic industry. As such, the survey employed in this study is from Kucukaltan et al. (2016), although adapted to the context of the Saudi postal service. The survey was organized into four sections: the learning and growth perspective (4 items), the internal business process perspective (4 items), the customer perspective (2 items) and the financial performance perspective (4 items). The questionnaire was translated from English into Arabic and the back translation method was used to ensure that the English and Arabic version of the survey agreed. The indicators and their descriptions are provided in the Appendix A. The respondents were asked to review the following measures using a five-point Likert scale whereby 1 = "strongly disagree" and 5 = "strongly agree".

The learning and growth (LGB) perspective includes employee training and development with a corporate focus on staff self-development. In their model, Kaplan and Norton emphasize that “learning” encompasses not only training but also mentoring provided to employees. The LGB perspective is also considered the intangible drivers of performance and can be further classified into three components: (1) human capital, which consists of the employees’ skills, talents and knowledge; (2) information capital, which consists of databases, information systems, networks and technology infrastructure; and (3) organization capital, which consists of culture, leadership, employee alignment, teamwork and knowledge management (Kaplan and Norton 2004).

The internal business process (IBP) perspective is focused on how well an organization is running its operations in terms of efficiency, waste management, operations cycle time and throughput speed. In this perspective, organizations should excel in key areas expected to provide the organization with value while looking for ways to improve their processes, quality and capacity.

The customer perspective (CP) is focused on objectives related to customers and markets. The CP should measure (1) the value proposition, that is, the value delivered to customers, which includes improving service performance, reducing waiting times and improving service quality and thereby improving customer satisfaction and (2) the value proposition, that is, the outcome of those activities, which includes improving customer satisfaction and building brand awareness.

The financial performance (FIN) perspective is related to the organization’s financial status and performance as a result of implementing given strategies. The FIN is viewed as the tangible outcome of the different stages in which an organization implements its strategy. Kaplan and Norton (1996) referred to these stages as rapid growth, sustain and harvest and each can be identified in reference to its own set of financial objectives. In the rapid-growth stage, organizations measure sales volume and growth revenue; in the sustain stage, the focus is managing operations cost and return on capital; and in the harvest stage, the focus is cash flow analysis measures.

4. Analysis and Findings

Measures and Validation

It is essential to establish the reliability and discriminant and convergent validity of the CFA before testing the strategic map via SEM. Therefore, convergent validity and discriminant and construct reliability were all established by performing CFA (Figure 1) using IBM AMOS version 22 software. To minimize the random error, a partial disaggregation approach was used to produce an analysis based on a relatively parsimonious model rather than on a fully disaggregated one (Bagozzi and Edwards 1998).

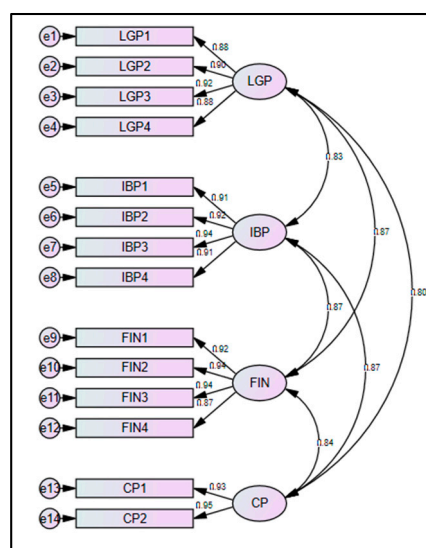


Figure 1. Confirmatory factor analysis (CFA).

The convergent validity includes using factor loadings and composite reliability (CR) and average variance extracted (AVE) indicators (Hair et al. 2010). Table 2 shows that the loading for each scale exceeds 0.50, which explains 89.63% of the variance and thereby provides strong evidence for convergent validity. In addition, convergent validity is also confirmed by the CR results, which surpass 0.70 (Hair et al. 2010). Further, the AVE values are lower than 0.5. In terms of discriminant validity, the square root of the AVE was shown to be greater than its correlations within the other constructs.

Table 2. Convergent Validity.

Factor	CR	AVE	Composite	Factor Loading	S.E.	C.R.	p Value
LGP	0.942	0.801	LGP1	0.936	–	–	
			LGP2	0.924	0.10	13.22	***
			LGP3	0.795	0.09	13.85	***
			LGP4	0.622	0.11	12.58	***
IBP	0.955	0.842	IBP1	0.877	–	–	
			IBP2	0.867	0.08	15.82	***
			IBP3	0.83	0.08	16.25	***
			IBP4	0.743	0.07	15.18	***
FIN	0.957	0.847	FIN1	0.925	–	–	
			FIN2	0.897	0.06	17.47	***
			FIN3	0.701	0.05	17.86	***
			FIN4	0.651	0.07	13.99	***
CP	0.938	0.884	CP1	0.813	–	–	
			CP2	0.736	0.06	17.42	***

Note. AVE: Average Variance Extracted, CP: customer perspective, C.R.: Critical Ratio, CR: Composite Reliability, FIN: financial performance perspective; IBP: internal business process perspective; LGP: learning and growth perspective, S.E.: Standard error. *** $p < 0.001$.

The results presented in Table 3 show that the constructs reached the criteria for discriminant validity where the average value extracted (AVE) is higher than 0.5 and the squared root of AVE is higher than the inter-factor correlation. Finally, the CFA results also indicate a good fit ($\chi^2(95) = 192.93$, $p = 0.00$, $\chi^2/df = 2.05$ CFI = 0.95, RMSEA = 0.01).

Table 3. Discriminant validity.

	AVE	CP	LGP	IBP	FIN
CP	0.884	0.940			
LGP	0.801	0.800	0.895		
IBP	0.842	0.870	0.830	0.918	
FIN	0.847	0.840	0.870	0.870	0.921

Note. AVE: average variance extracted; CP: customer perspective; FIN: financial performance perspective; IBP: internal business process perspective; LGP: learning and growth perspective. Values below the diagonal are correlation estimates among the factors and diagonal elements are the squared root of AVE.

Next, SEM was used to test the causal links in the BSC. The overall fit of the proposed structural model is $\chi^2 = 5.31$; $df = 2$; $\chi^2/df = 2.66$, which is within the acceptable range: GFI = 0.98, RMSR = 0.13, NFI = 0.99 and CFI = 1.00, which represent an acceptable overall goodness of fit for the research model (Table 4).

Table 5 shows that all the causal relationships between the four BSC perspectives are highly significant at $p = 0.001$. Specifically, the estimate of the standardized path coefficient (P) indicates that the linkage between the learning and growth perspective (LGP) and the internal business process perspective (IBP) is highly significant, which supports H1, that improving the work environment with by keeping pace with the advancement of the technology in the industry and offering sufficient training to their employees will positively impact internal business processes positively ($P = 0.86$, $p = 0.000$). The relationship between IBP and CP is also highly significant ($P = 0.68$, $p = 0.000$), which supports H2, that is, enhancing internal business processes has a positive impact on customer perspective. H3 is also

supported by the significant positive impact of CP on FP ($P = 0.19$, $t = 2.21$, $p = 0.03$), that is, improving customer satisfaction with the service provided will directly enhance the financial performance of the postal centre. Finally, the structural model also showed other direct effects between the four perspectives: LGP showed a direct significant impact on customer perspective ($P = 0.26$, $p = 0.000$) and IBP showed a significant direct effect on financial performance (FIN) ($P = 0.86$, $p = 0.000$).

Table 4. Goodness of Fit Measure of the Proposed Model.

Goodness of Fit Measure	Recommended Value	Value
Distinct parameters		15
Chi-square (χ^2) of estimated model		5.31
Degree of freedom (df)		2
Chi-square/degree of freedom (χ^2/df)	≤ 5.0	2.66
Goodness of Fit Index (GFI)	≥ 0.90	0.98
Root Mean Square Residual (RMSR)	≤ 0.10	0.13
Normed Fit Index (NFI)	≥ 0.90	0.99
Comparative Fit Index (CFI)	≥ 0.90	1.00
Adjusted Goodness of Fit Index (AGFI)	≥ 0.80	0.85

Table 5. Structural Path Estimates.

Hypothesis	Path	Effect		Result
		(β)	t-Value	
1	IBP <--- LGP	0.86 ***	17.14	supported
2	CP <--- IBP	0.26 ***	3.09	supported
3	FIN <--- CP	0.19 ***	2.21	supported

Note. CP: customer perspective; FIN: financial performance perspective; IBP: internal business process perspective; LGP: learning and growth perspective, *** $p < 0.001$.

After the analysis of the main causal relationship in the strategy map, the mediating effect of CP on IBP and FIN was examined. Many tests have been developed to study the mediating effect between independent and dependent constructs, such as Baron and Kenny's (1986) steps to establish the mediating effect, Sobel's (1982) test and Preacher and Hayes's (2004) test. Given the small sample size of the present study, the most effective way to test the mediating effect is Preacher and Hayes's (2004) bootstrapping non-parametric test, as this test does not require the normality assumption to be met.

The bootstrapping test examines the strength of the indirect effect, which is the difference between the total effect and the direct effect. Based on bootstrapping estimates of 2000 bootstrap samples (Table 6), the indirect effect ($A \times B = 0.1292$) has a confidence interval of 0.01 and 0.34. As the bootstrapping confidence interval does not contain zero, the indirect effect is considered statistically significant (Preacher and Hayes 2008). In addition, the p-value of the indirect effect is less than 1%, which is also considered highly significant. Based on these results, it can be confirmed that the customer perspective of BSC mediates the relationship between the internal process perspective and the financial perspective.

Another indirect effect examined is the mediating effect of IBP on LGP and CP. Based on the bootstrapping, the indirect effect was $A \times B = 0.5848$ with a confidence interval of 0.37–0.83, indicating that the indirect effect is statistically significant. Based on the bootstrapping results presented in Table 6, both mediating effects are confirmed as statistically significant.

Table 6. Mediating Analysis Based on 2000 Bootstrap Samples.

Independent Variable (INDP)	Mediating Variable (MED)	Dependent Variable (DEP)	Effect of INDP on MED (A)	Effect of MED on DEP (B)	Indirect Effect (A × B)	Confidence Interval
LGP	IBP	CP	0.86 ***	0.68 ***	0.5848 ***	0.37–0.83
IBP	CP	FIN	0.68 ***	0.19 ***	0.1292 ***	0.01–0.34

Note. LGP: learning and growth perspective; IBP: internal business process; CP: customer perspective; FIN: financial performance. *** $p < 0.001$.

5. Conclusions

In this study, the effects of the BSC perspectives on the performance measures of the Saudi postal service were examined. The proposed model goes beyond the generic strategic map to account for the causal relationships and tests other relationships between the BSC perspectives, including direct and indirect effects.

The CFA results confirmed the convergent and discriminant validity of the instrument used herein. Further, the SEM analysis confirmed the generic causal relationships between the BSC perspectives in a strategy map (Hypotheses 1, 2 and 3). In addition, the SEM analysis showed that the learning and growth perspective has a direct effect on customer perspective, which is significantly mediated through the internal business process such that Hypothesis 4a is supported. Another interesting relationship is that the internal business process perspective also has a direct effect on the financial performance perspective and this link is mediated through the customer perspective, thereby providing support to Hypothesis 4b.

Based on the analysis, the study confirmed that mediating effects are integral to strategy maps and that the direct and indirect effects could potentially provide a deeper understanding of how these perspectives are linked to one another. Unlike other studies (Pérez et al. 2017; Valmohammadi and Sofiyabadi 2015; Wu 2012), which focus on giving weight to perspectives or highlighting the most important perspective in a strategy map, this study shows that organizations should not ignore any of the causal relationships between the four perspectives.

Based on the study results, it is evident that the implications of strategy maps with clearly established causal links can easily be grasped by employees such that they gain a better understanding of their organization's strategy. Many researchers have highlighted the importance of assigning appropriate weight to each of the BSC perspectives in order to prioritize them appropriately. However, only a few studies include a consideration of the causal relationships between these perspectives. Given that this is the case, in the present study, these causal relationships are explored using SEM and the mediating effects between these perspectives are also considered.

As this study relies on an instrument designed to assess the main indicators in each perspective of the BSC in the logistics industry based on the work of Kucukaltan et al. (2016), the results can be generalized to service providers in the logistics sector. From a managerial perspective, the results presented confirmed the existence of interrelationship between the BSC perspectives in the logistics industry. Thus, organizations should focus on the leading indicators to improve their financial outcomes. In addition, managers in this sector should draw more attention to intangible drivers of performance such as keeping pace with technological changes in the work environment and offering training programs to ensure that their employees have up-to-date skills and knowledge. Those activities will equip their employees with the skills and competencies needed to advance the business enterprise.

Another important managerial implication here is that organizations in other sectors should also look at these perspectives in a holistic way and identify and investigate all possible paths (direct and/or indirect) to improving the service they render. On this basis, managers can guide the organization toward taking the right steps to improve organizational performance in regard to all the BSC perspectives instead of devoting organizational resources to only one of these.

It is worth noting that the results of this paper apply only to the focal organization, that is, the Saudi Postal Corporation. Given that each organization is considered unique in terms of its strategy and measures, the findings of this paper should not be generalized. Further research should explore and document causal relationships in other types of organizations across all industry sectors.

Another limitation of the present study is that the data were measured subjectively using a questionnaire, which has inherent shortcomings, as is the case for all such instruments and the studies based on them. Therefore, it would be beneficial if researchers in this field were to consider different ways to assess these indicators. Examples in this regard could be collecting the number of customer complaints as an indicator of customer satisfaction or determining the number of training programs offered and the percentage of employees who attended them as a measure for well-trained employees.

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Appendix A

Table A1. The survey: Responses to the following questions ranged from 1 = “totally disagree” to 5 = “totally agree”.

Notation	Indicator	Description
LGP1	IT infrastructure	SP keeps pace with technological changes in the work environment.
LGP2	Managerial skills	SP is keen to evaluate the management methods used in dealing with employees.
LGP3	Educated employees	SP offers sufficient training courses to employees in accordance with business needs.
LGP4	Social media usage for brand building	SP utilizes social media outlets to build a brand.
IBP1	On-time delivery	SP has plans to reduce wasted time in the postal operations process.
IBP2	Circumstances of delivery	SP has plans to reduce the percentage of goods damaged during shipping.
IBP3	Transport capacity	SP has sufficient transport capacity to accommodate peak demand.
IBP4	Warehouse capacity	SP has sufficient warehouse capacity to accommodate peak demand.
CP2	Customer satisfaction	SP provides customers with timely delivery of letters and parcels.
CP1	Employee satisfaction	SP takes into consideration the fairness of the opportunities and standards adopted in the promotion of its employees.
FIN1	Sales growth	SP measures sales growth to ensure the growth of its sales.
FIN2	Cost	SP measures the efficiency and the cost-benefit of its operations.
FIN3	Profitability	SP employs revenue management to increase revenue.
FIN4	Postal traffic	SP tracks postal traffic and employs strategies to increase traffic.

References

- Adeinat, Iman M., and Norizan Kassim. 2019. Extending the service profit chain: The mediating effect of employee productivity. *International Journal of Quality and Reliability Management*. in press.
- Aidemark, Lars-Göran. 2001. The meaning of balanced scorecards in the health care organisation. *Financial Accountability and Management* 17: 23–40. [\[CrossRef\]](#)
- Alani, Farooq Salman, M. Firdouse Rahman Khan, and Diana F. Manuel. 2018. University performance evaluation and strategic mapping using balanced scorecard (BSC) case study—Sohar University, Oman. *International Journal of Educational Management* 32: 689–700.
- Alhyari, Salah, Moutaz Alazab, Sitalakshmi Venkatraman, Mamoun Alazab, and Ammar Alazab. 2013. Performance evaluation of e-government services using balanced scorecard: An empirical study in Jordan. *Benchmarking: An International Journal* 20: 512–36. [\[CrossRef\]](#)
- Bagozzi, Richard P., and Jeffrey R. Edwards. 1998. A general approach for representing constructs in organizational research. *Organizational Research Methods* 1: 45–87. [\[CrossRef\]](#)
- Banker, Rajiv D., Hsihui Chang, and Mina Pizzini. 2011. The judgmental effects of strategy maps in balanced scorecard performance evaluations. *International Journal of Accounting Information Systems* 12: 259–79. [\[CrossRef\]](#)
- Baron, Reuben M., and David A. Kenny. 1986. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology* 51: 1173–82. [\[CrossRef\]](#)
- Cheng, Mandy M., and Kerry A. Humphreys. 2012. The differential improvement effects of the strategy map and scorecard perspectives on managers’ strategic judgments. *The Accounting Review* 87: 899–924. [\[CrossRef\]](#)

- De Carlo, Manuela, Antonella Cugini, and Fabrizio Zerbini. 2008. Assessment of destination performance: A strategy map approach. *Tourism Review* 63: 25–37. [[CrossRef](#)]
- Falle, Susanna, Romana Rauter, Sabrina Engert, and Rupert J. Baumgartner. 2016. Sustainability management with the sustainability balanced scorecard in SMEs: Findings from an Austrian case study. *Sustainability* 8: 545. [[CrossRef](#)]
- Flynn, Francis J. 2005. Identity orientations and forms of social exchange in organizations. *Academy of Management Review* 30: 737–50. [[CrossRef](#)]
- Gomes, Jorge, Mário Romão, and Mário Caldeira. 2013. The benefits management and balanced scorecard strategy map: How they match. *International Journal of IT/Business Alignment and Governance (IJITBAG)* 4: 44–54. [[CrossRef](#)]
- Hair, Joseph F., William C. Black, Barry J. Babin, and Rolph E. Anderson. 2010. *Multivariate Data Analysis: A Global Perspective*, 7th ed. Upper Saddle River: Pearson.
- Heskett, James, Thomas O. Jones, Gary W. Loveman, W. Earl Sasser, and Leonard A. Schlesinger. 1994. Putting service-profit to work. *Harvard Business Review* 72: 164–74.
- Hu, Bo, Ulrike Leopold-Wildburger, and Jürgen Strohhecker. 2017. Strategy map concepts in a balanced scorecard cockpit improve performance. *European Journal of Operational Research* 258: 664–76. [[CrossRef](#)]
- Huang, Hao-Chen, Wenyi Chu, Mei-Chi Lai, and Lee-Hsuan Lin. 2009. Strategic linkage process and value-driven system: A dynamic analysis of high-tech firms in a newly-industrialized country. *Expert Systems with Applications* 36: 3965–74. [[CrossRef](#)]
- Kaplan, Robert S. 2012. The balanced scorecard: Comments on balanced scorecard commentaries. *Journal of Accounting and Organizational Change* 8: 539–45. [[CrossRef](#)]
- Kaplan, Robert S., and David P. Norton. 1992. The balanced scorecard: Measures that drive performance. *Harvard Business Review* 70: 71–79.
- Kaplan, Robert S., and David P. Norton. 1996. *The Balanced Scorecard: Translating Strategy into Action*. Boston: Harvard Business School Press.
- Kaplan, Robert S., and David P. Norton. 2001a. Transforming the balanced scorecard from performance measurement to strategic management: Part I. *Accounting Horizons* 15: 87–104. [[CrossRef](#)]
- Kaplan, Robert S., and David P. Norton. 2004. Measuring the strategic readiness of intangible assets. *Harvard Business Review* 82: 52–63.
- Kaplan, Robert S., and David P. Norton. 2004b. *Strategy Maps: Converting Intangible Assets into Tangible Outcomes*. Boston: Harvard Business School Press.
- Kucukaltan, Berk, Zahir Irani, and Emel Aktas. 2016. A decision support model for identification and prioritization of key performance indicators in the logistics industry. *Computers in Human Behavior* 65: 346–58. [[CrossRef](#)]
- Lan, Shulin, Hao Zhang, Ray Y. Zhong, and George Q. Huang. 2016. A customer satisfaction evaluation model for logistics services using fuzzy analytic hierarchy process. *Industrial Management and Data Systems* 116: 1024–42. [[CrossRef](#)]
- Lee, Jenny, Paul G. Patterson, and Liem Viet Ngo. 2017. In pursuit of service productivity and customer satisfaction: The role of resources. *European Journal of Marketing* 51: 1836–55. [[CrossRef](#)]
- Lilian Chan, Yee-Ching. 2009. How strategy map works for Ontario's health system. *International Journal of Public Sector Management* 22: 349–63. [[CrossRef](#)]
- Maritz, Alex, and Gideon Nieman. 2008. Implementation of service profit chain initiatives in a franchise system. *Journal of Services Marketing* 22: 13–23. [[CrossRef](#)]
- Martello, Michael, John G. Watson, and Michael J. Fischer. 2016. Implementing a balanced scorecard in a not-for-profit organization. *Journal of Business and Economics Research (Online)* 14: 61–74. [[CrossRef](#)]
- McAdam, Rodney, Renee Reid, and Robbie Saulters. 2002. Sustaining quality in the UK public sector: Quality measurement frameworks. *International Journal of Quality and Reliability Management* 19: 581–95. [[CrossRef](#)]
- Nayeri, Mahmoud Dehghan, M. M. Mashhadi, and Kaveh Mohajeri. 2008. Universities strategic evaluation using balanced scorecard. *World Academy of Science, Engineering and Technology* 37: 332–34.
- Pérez, César Álvarez, Vicente Rodríguez Montequín, Francisco Ortega Fernández, and Joaquín Villanueva Balsera. 2017. Integration of balanced scorecard (BSC), strategy map and fuzzy analytic hierarchy process (FAHP) for a sustainability business framework: A case study of a Spanish software factory in the financial sector. *Sustainability* 9: 527. [[CrossRef](#)]

- Preacher, Kristopher J., and Andrew F. Hayes. 2004. SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers* 36: 717–31.
- Preacher, Kristopher J., and Andrew F. Hayes. 2008. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods* 40: 879–91. [CrossRef]
- Singh, Sujit, Ezutah Udong Olugu, Siti Nurmaya Musa, and Abu Bakar Mahat. 2018. Fuzzy-based sustainability evaluation method for manufacturing SMEs using balanced scorecard framework. *Journal of Intelligent Manufacturing* 29: 1–18. [CrossRef]
- Sobel, Michael E. 1982. Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology* 13: 290–312. [CrossRef]
- Thakkar, Jitesh, S. G. Deshmukh, A. D. Gupta, and Ravi Shankar. 2006. Development of a balanced scorecard: An integrated approach of interpretive structural modelling (ISM) and analytic network process (ANP). *International Journal of Productivity and Performance Management* 56: 25–59. [CrossRef]
- Tohidi, Hamid, Aida Jafari, and Aslan Azimi Afshar. 2010. Using balanced scorecard in educational organizations. *Procedia-Social and Behavioral Sciences* 2: 5544–48. [CrossRef]
- Tsalis, T. A., I. E. Nikolaou, E. Grigoroudis, and K. P. Tsagarakis. 2013. A framework development to evaluate the needs of SMEs in order to adopt a sustainability-balanced scorecard. *Journal of Integrative Environmental Sciences* 10: 179–97. [CrossRef]
- Valmohammadi, Changiz, and Javad Sofiyabadi. 2015. Modeling cause and effect relationships of strategy map using fuzzy DEMATEL and fourth generation of balanced scorecard. *Benchmarking: An International Journal* 22: 1175–91. [CrossRef]
- Vargo, Stephen L., and Robert F. Lusch. 2004. Evolving to a new dominant logic for marketing. *Journal of Marketing* 68: 1–17. [CrossRef]
- Wayne, Sandy J., Lynn M. Shore, and Robert C. Liden. 1997. Perceived organizational support and leader-member exchange: A social exchange perspective. *Academy of Management Journal* 40: 82–111.
- Wu, Hung-Yi. 2012. Constructing a strategy map for banking institutions with key performance indicators of the balanced scorecard. *Evaluation and Program Planning* 35: 303–20. [CrossRef]
- Yee, Rachel W., Andy C. Yeung, and T. Edwin Cheng. 2010. An empirical study of employee loyalty, service quality and firm performance in the service industry. *International Journal of Production Economics* 124: 109–20. [CrossRef]
- Zahoor, Adil, and Musadiq Amin Sahaf. 2018. Investigating causal linkages in the balanced scorecard: An Indian perspective. *International Journal of Bank Marketing* 36: 184–207. [CrossRef]
- Zhang, Qingyu, Mark A. Vonderembse, and Jeen-Su Lim. 2005. Logistics flexibility and its impact on customer satisfaction. *The International Journal of Logistics Management* 16: 71–95. [CrossRef]

