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Market Competition, Perceived Environmental Uncertainty, Supply Chain Management Systems, and Organizational Performance: Hotel Starred in Bali Province, Indonesia

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Abstract-**The purpose of this study is to examine the effect of market competition (MC) and perceived environmental uncertainty (PEU) on the use of supply chain management (SCM) information and the utilization of SCM information on organizational performance, based on contingency theory. Data were collected using a questionnaire sent directly to the main managers of three, four and five-star hotels in the Province of Bali, Indonesia. This study uses organizational level analysis units. The data obtained were 122 and analyzed using WarpPls 6.0. The results showed that MC and PEU had a positive and significant effect on the utilization of SCM information (broad scope, timeliness, aggregation, and integration). In addition, the use of SCM information, affects the performance of three, four and five-star hotels in Bali Province, Indonesia.**

Keyword; market competition, perceived environmental uncertainty, supply chain management, organizational performance

1. Introduction

Face up to the industrial revolution 4.0, various problems that arise in the hospitality industry such as, increasing customer expectations, maintaining customer satisfaction and loyalty, and improving service quality [1]; Open entry of prices, products and services offered and differential access by customers, [2]; competition is increasingly fierce, because tourists today, more than ever looking for new and unique experiences, [3] and increasingly high levels of environmental uncertainty.

In order to successfully manage business in situations like the above, managers need to implement sophisticated information systems, which are able to supply them with adequate, reliable business information [2, 4]. One information system that can provide information services to organizations is a SCM in accordance with [4, 5] which states that SCM plays a very important role by providing reliable information services to most organizations. SCM provides support by accessing and using information needed by managers [5], and helps improve the quality of decisions made, this will have an impact on improving organizational performance.

The important role of SCM in the hospitality industry has been studied by previous researchers, for example, [2,

9] examined utilization of information SCM by main managers and department managers, for decision making. [6] examined the perceptions of department managers about the intensity of MC, the utilization of SCM information, the broad scope, and department performance. However, there are no studies that examine together how the utilization of SCM information, broad scope, timeliness, aggregation, and integration are related to organizational performance, in the hospitality industry.

This study is important because based on theoretical and empirical reviews show that SCM in organizations is not unique and universal, because it depends on the characteristics of each organization and environmental aspects [7]. This is identical to the contingency approach to supply chain management which proposes that more efficient operations will be achieved by the organization if they utilize a SCM that is appropriate to the characteristics of the organization and its environmental conditions. [8]. This is because a contingency approach using the basic rules of "fit" will positively affect performance, assuming that operating efficiency will be achieved if the organization implements and uses structures and processes that are appropriate to environmental conditions [9, 10].

Based on contingency theory, the purpose of this study is to investigate how MC variables and environmental uncertainty, affect the utilization of SCM information characteristics (broad scope, timely, aggregation and integration) and how the characteristics of the information, in turn, affect organizational performance, (three, four and five-star hotels) in Bali Province, Indonesia.

Based on a survey of 230 three, four and five-star hotels in Bali Province, Indonesia participated in this study as many as 122 hotels. This research resulted in two contributions, first showing that MC and environmental uncertainty, had a positive significant effect on the utilization of SCM information and utilization of SCM information affected organizational performance. Secondly, we contribute to contingency theory by empirically studying the relationship of MC, PEU, utilization of SCMinformation and organizational performance.

Furthermore, this paper is organized as follows. The reviewed literature is presented in section 2, hypothetical development is presented in section 3. Section 4 presents the research method and section 5 presents the results. The

discussion is presented in section 6, while the conclusions and implications are presented in section 7.

2. Literature review
2.1 Supply chain management system

SCM is a formal system [7, 11], which is part of an information system with its main function being to provide information to users for decision-makers [12]. Computerized information systems and performance measurement, budgeting and forecasting are SCM practices [13]. The satisfaction of users of SCM information services is very important [12]. According to [7] the quality of SCM information includes three features namely accuracy, timeliness and relevance.

However, this study uses the characteristics of SCM information, broad scope, timeliness, aggregation, and integration, developed by [14]. The broad scope information features refer to the dimensions of focus, quantification, and time horizon. While timeliness is how quickly information can be provided when needed [12]. Information aggregation is information processing that is relevant to various aspects of organizational reality, so that it can support managers in considering various alternatives. Integrated information facilitates coordination within, and between, sub-units of the organization, to support the decision-making process and ex-post control [15].

2.2 Market competition

In the hospitality industry, competition has increased due to globalization, increased information technology, customer awareness of quality, and the amount of supply exceeding demand [6]. This competition results in turbulence, stress, risk, and uncertainty for organizations [3]. The high level of uncertainty faced by the hotel industry, exacerbated by the uniqueness of the industry, such as its non-intrusive and long-lasting nature, and short cycles in the production, delivery and consumption of products and services [16].

The ability to adapt quickly to situations and conditions is needed by organizations in order to survive in an increasingly competitive environment. SCM information can be widely used by managers to improve the effectiveness of decisions, so that the adaptation process can be done more quickly. Various information can be provided by SCM such as the effectiveness of sales promotion programs, revenue based on room type, customer categories, and customer satisfaction [2] and monitoring the company's strategic progress through a feedback information system [17].

2.3 Perceived environmental uncertainty

According to [18] environmental uncertainty can occur as a result of lack of information about environmental factors related to decision making; no specific outcome is known when the decision made is incorrect; and the inability to determine the opportunities for how environmental factors influence the success or failure of the decision taken. Environmental uncertainty consists of state uncertainty, effect uncertainty, and response uncertainty. The perceived uncertainty is a form of state uncertainty. When the administrator feels that the environment or some of its components are unpredictable, the administrator experiences a state of uncertainty. The inability to predict the impact of environmental change on an organization is known as the effect uncertainty. Whereas response uncertainty is the lack of information or knowledge about the available response options, or the inability to predict the possible consequences of response options.

According to Fisher [19] in empirical research, to measure environmental uncertainty used PEU. In this case, the situation that was responded to was not the physical environment but the environment that they had built themselves, this environment that they considered real. Although uncertainty is not an objective feature of the environment, because individuals who feel the psychological nature of individuals must be evaluated subjectively [20].

3. Hypothesis development
3.1. Relationship between MC and SCM information utilization.

The rapid changes in the business environment cause increasingly fierce MC [21]. Under competitive conditions, companies are required to respond appropriately to existing threats and opportunities, by designing and using the right SCM [22]. SCM is important because it allows the decision making the process by managers to be optimized [23, 24]. According to [14], market uncertainty is a result of increased competition. Uncertainty in the market requires companies to be able to find accurate and reliable information. SCM information helps provide information that reduces uncertainty.

Reliable information provided by sophisticated SCM (broad scope, timeliness, integrated and combined), which is needed by managers, because SCM is an integral part of information and business control systems that can support management for decision making to improve management performance [6, 8, 24]. SCM can be used efficiently to handle competitive factors. Relevant SCM information helps managers to evaluate product attributes, prices and costs of substitute products in the market [3]. High competition requires sophisticated management controls that can provide managers with comprehensive information for decision making, so that organizational performance increases. In other words, the use of SCM information in the face of competition will bring better performance [21-25].

Previous studies have shown inconsistent results of the relationship of MC to the use of SCM information, for example, [20] proving that in Australian manufacturing companies, MC has a positive and significant effect on the use of SCM. The significant positive relationship of competition to the use of SCM information, broad scope, timely, aggregation and integration is also evidenced by [3]. Different results show [6, 21] intensity of MC has a positive and not significant effect on the use of SCM.

Based on the description above, then the H1 hypothesis that will be tested in this study:

H1: MC has a positive effect on the utilization of SCM information.

H1a: MC has a positive effect on the utilization of broad-based SCM information.

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H1b: MC has a positive effect on the utilization of SCM timeliness information.

H1c: MC has a positive effect on the utilization of integrated SCM information.

H1d: MC has a positive effect on the utilization of aggregate SCM information.

3.2. Relationship between PEU and SCM information utilization

According to[26] states that when environmental uncertainty is felt even higher, decision-makers tend to look for extensive information (external, non-financial and prior information) in addition. Whereas [27] states that management will be able to make predictions about the market relatively accurately when the PEU is low. However, when PEU is high, management may require additional information to cope with an increasingly complex environment. A sophisticated SCM (broad scope, timeliness, aggregation, and integration) is able to provide valid and reliable information, which is needed by managers [6, 8, 24], so that it can help reduce uncertainty and improve managerial decision making.

According to [12, 27] as PEU rises, managers as broad scope use of SCM information also increases. This is because the use of broad scope SCM information can help them gather more useful information to improve the accuracy of their decisions. Meanwhile, [28] states that sophisticated, broad scope SCM information is very important to evaluate competitive action or market demand when the PEU is high. Timeliness of SCM Information has the potential to reduce uncertainty. With the timeliness of information allows decision-makers to continuously adjust their activities, in response to changes in the environment. Managers feel the need to respond quickly to changes in the environment and market demand. As a result, SCM timeliness information is very useful. The integrated dimension of SCM information is also increasingly important because it plays a role in providing information to coordinate between sub-units as PEU increases. Thus [28] tates the higher the level of PEU, the more the level of information aggregation needed. According to [21] SCM can provide timely, accurate and relevant information that can be used in conditions of MC for effective decision making.

Previous studies have shown inconsistencies in the relationship between PUE and SCM, for example, [14] provide evidence that there is a positive relationship between PEU and broad-based SCM information and timeliness. Identical evidence is also shown by [28] namely the positive and significant relationship of SCM information (broad scope, timeliness, aggregation) to PEU. Whereas [27] prove that PEU is significantly positively related to broad scope SCM. Different results are shown by [12] with evidence that PEU has a significant negative relationship to the use of SCM information in broad scope, timeliness, aggregation, and integration.

Based on this study, the third hypothesis H2 that will be tested in this study is:

H2: PEU has a positive effect on the utilization of SCM information

H2a: PEU has a positive effect on the utilization of broad-scope SCM information

H2b: PEU has a positive effect on the utilization of SCM timeliness information

H2c: PEU has a positive effect on the utilization of aggregated SCM information

H2d: PEU has a positive effect on the utilization of integrated SCM information

3.3. The relationship between the use of SCM information to organizational performance

SCM information is a very important resource in an organization. This is because of SCM as the main provider of information in most organizations with useful information [4, 5]. Some useful information characteristics are provided by SCM such as broad scope, timeliness, aggregation, and integration [14]. In the hospitality industry, the important role of SCM is to provide information on the effectiveness of sales promotions, incomes based on room types, groups and customer satisfaction [2].

Utilization of SCM information by managers can support organizations in making economic decisions more accurately, this has a positive impact on organizational performance [7, 11, 21, 28, 29]. Whereas [20] stated the utilization of SCM information, can improve the performance of an organization by providing feedback on implementing plans and completing work. Meanwhile, from the perspective of contingency theory, supply chain management shows that performance will be better if the organization adopts an accounting system that suits its context, [7,40].

However, empirical evidence of the relationship between the use of SCM information on organizational performance is still lacking. According to [20] the use of SCM information by managers is positively related significantly to the performance of business units. While [29, 30] also proves that the use of broad-range SCM information has a positive and significant effect on organizational performance. The significant effect of SCM on organizational performance is also evidenced by [31].

Based on this study, the third hypothesis (H3) that will be tested in this study are:

H3: The use of SCM information has a positive effect on organizational performance

H3a: The utilization of broad-scope SCM Information has a positive effect on organizational performance

H3b: The utilization of timeliness SCM Information has a positive effect on organizational performance.

H3c: The utilization of timeliness Information SCM integration has a positive effect on organizational performance.

H3d: The utilization of SCM aggregation information has a positive effect on organizational performance.

3.4. Theoretical framework

Based on the literature review described previously, a theoretical framework was developed, as shown in Figure 1.
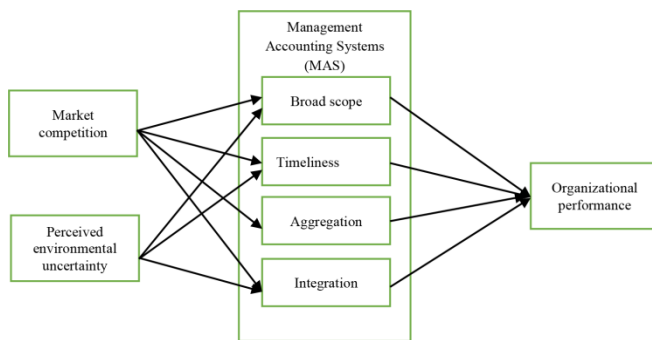
Figure 1. Theoretical framework

4. Research Methods
4.1. Data collection and sample

Research data were collected through a mail survey, which was sent to all three, four and five-star hotels in Bali Province, Indonesia. The questionnaire was sent by post, contact person, and online to the hotel manager, as many as 230 copies. The results of the data collection of 122 questionnaires can be used, with a response rate of 53 percent. We conducted a non-response biased test using the t-test to compare 120 respondents coming in the earliest and 12 respondents arriving last. The test results show The test results statistically have shown there were no significant differences between the two groups of respondents (P> 0.05).

4.2. Measures

We use instruments developed by [31, 32] and have been used by [6, 12] to measure SCM information. The instrument consists of four dimensions of SCM information characteristics namely, broad scope, timeliness, aggregation and integration, which includes 20 question items, a five-point Likert scale ranging from " 1 " (strongly disagree) to " 5 " (strongly agree) is used as a measure Respondents are asked to provide responses to how far they use SCM information.

The PEU instrument adopted from [18, 32], consists of three dimensions, namely, state uncertainty, effect uncertainty and response uncertainty which includes 2 question items. A five-point type Likert scale ranging from "1" (strongly disagree) to "5" (strongly agree) is used as a measure.

We adopted an instrument developed by [33] and was used by [3, 8] to measure the intensity of MC. We have adjusted the instrument to the research object, consisting of 5 (five) question items. A five-point type Likert scale from "1" (strongly disagree) to "5" (strongly agree) is used as a measure.

The organizational performance instrument was adopted from [34, 35, 36] developed for the hospitality industry, consisting of financial and non-financial performance. The questionnaire consisted of 8 items. A five-point type Likert scale ranging from "1" (strongly disagree) to "5" (strongly agree) is used as a measure.

5. Results
5.1. Profile of respondents

Table 1 presents the respondent's profile. More than half of the hotels participating in this study were four-star hotels (53.28%). Most respondents have 5-10 years of experience (53.28%), with the majority of sex being male (77.87%). Most respondents were in the range of 31-40 years (51.43%), and the majority of undergraduate education (64.75%).

Table 1. Profile respondents

Demographic variable	Category	Frequency (n=126)	%
Hotel classification	Five stars	34	27,87%
	Four star	65	53,28%
	Three star	23	18,85%
Period of experience	<= 5 year	31	25,41%
	5-10 year	65	53,28%
	>10 year	26	21,31%
Gender	Male	95	77,87%
	Female	27	22,13%
Age	≤ 30 year	11	10,48%
	31 – 40 year	80	51,43%
	>40 year	31	38,10%
Educational level	Diploma	18	14,75%
	Bachelor's degree	79	64,75%
	SCMter' degree	25	20,49%
	PhD		

Table 2, gives a summary of statistics such as theoretical range, actual range, mean and standard deviation (SD) for all variables. MC has the highest mean (3.83) with a standard deviation (0.80), followed by integration (3.71) with a standard deviation (0.90), while timeliness has the lowest mean (2.85) with a standard deviation (0.77).

Table 2. Descriptive statistics

Variables	Theoretical Range	Actual range	Mean	Standard deviation
Market competition (mc)	1-5	2,00 - 5,00	3,83	0,80
Perceived environmental uncertainty (PEU)	1-5	1,42 - 4,50	3,40	3,40
Broad scope (scope)	1-5	1,20 – 5,00	3,68	0,93
Time lines (time)	1-5	1,00 – 4,00	2,85	0,77

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Aggregation (agre)	1-5	1,00 – 5,00	3,57	0,93
Integration (inte)	1-5	1,00 – 5,00	3,71	0,90
Organizational performance (perf)	1-5	2,38 - 7,50	5,46	1,18

5.2. Measurement

To verify the theoretical and hypothesized research models, Partial Least Square (PLS) was used with WarpPLS 6.0 software. With PLS, the analysis and interpretation of the model are carried out in two stages, first the measurement model (outer models) and the second structural model (inner models). The outer model displays the relationship between constructs and indicators and assesses the reliability and validity of the measurement model, while the inner mode represents constructs and displays the relationship (path) between constructs [34-37].

a. Measurement model

Convergent validity, discriminant validity, and reliability tests are used to assess the adequacy of the measurement model. Evaluation of construct validity of construct using the loading factor indicator and extracted average variance (AVE), [38]. The outer model results shown in table 3 show that convergent validity criteria have been fulfilled, namely loading factors greater than 0.70, based on [49], and AVE greater than 0.05, according with [39] who say the AVE value of 0.50 or more shows adequate convergent validity.

Table 3 also shows that reliability has been fulfilled with composite reliability greater than 0.70 as suggested by [40], as well as Cronbach alpha greater than 0.70. While table 4 shows that the discriminant validity has been fulfilled, that is the AVE root in the diagonal column is greater than the correlation between constructs in the same column. The description above shows that the measurement model is valid and reliable

Table 3. Validity and reliability assessment for theoretical model

Construct	item	Factor loading	AVE	Composite reliability	Cronbach's alpha
Market competition (MC)	MC1	0.906	0.810	0.955	0.941
	MC2	0.907			
	MC2	0.901			
	MC4	0.904			
	MC5	0.881			
Perceived uncertainty environmental (peu)	Peu1	0.846	0.718	0.965	0.961
	Peu2	0.855			
	Peu3	0.884			
	Peu4	0.845			
	Peu5	0.860			
	Peu6	0.814			
	Peu7	0.886			
	Peu8	0.844			
	Peu9	0.848			
	Peu10	0.822			
	Peu11	0.811			
	Peu12	(0.031) removed			
Broad Scope (scope)	Scope 1	0.858	0.749	0.937	0.916
	Scope 2	0.914			
	Scope 3	0.894			
	Scope 4	0.828			
	Scope 5	0.831			
Timeliness (time)	Time 1	0.895	0.769	0.930	0.899
	Time 2	0.913			
	Time 3	0.880			
	Time 4	0.817			
Aggregation (agre)	Agre1	0.891	0.718	0.927	0.900
	Agre2	0.894			
	Agre3	0.901			
	Agre4	0.824			
	Agre5	(0.690) removed			
	Agre6	(0.682) removed			
	Agre7	0.713			
Integration (inte)	Inte1	0.892	0.828	0.951	0.931
	Inte2	0.932			
	Inte3	0.922			
	Inte4	0.893			
Organizational Performance (perf)	Perf1	0.840	0.706	0.950	0.940
	Perf2	0.859			
	Perf3	0.780			
	Perf4	0.858			
	Perf5	0.855			
	Perf6	0.832			
	Perf7	0.826			
	Perf8	0.868			

Notes: n = 122

Tabel 4. Correlations among latent variables with Square roots of average variances extracted (AVEs)

	AVE	Composite reliability	mc	peu	scope	time	agre	inte	pef
mc	0.810	0.955	0.900						
peu	0.718	0.965	0.433	0.847					
scope	0.749	0.937	0.656	0.623	0.866				
time	0.769	0.930	0.495	0.604	0.594	0.877			
agre	0.718	0.927	0.582	0.598	0.688	0.655	0.848		
inte	0.828	0.951	0.447	0.760	0.612	0.616	0.604	0.910	
perf	0.706	0.950	0.478	0.669	0.676	0.697	0.685	0.732	0.840

b. Structural Model

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The relationship between latent variables was analyzed using a structural model [3]. Structural model evaluation is done by estimating path coefficients and R^2 values [12]. The path coefficient shows the strength of the relationship between the independent and dependent variables, while the predictive power of the model for the dependent variable is measured by the value of R^2 [11]. Hypothesis support is provided if the path coefficient value is significant. The structural model in this study was determined using the bootstrap re-sampling method (500 re-samples). Figure 2 and table 5, show the results of the overall analysis. According to [22] standard pathway, to be considered meaningful, must be at least 0.20, and ideally above 0.30.

Figure 2 and table 5 show that MC is positively and significantly related to broad scope ($\beta = 0.475$, $p < 0.001$), timeliness ($\beta = 0.288$, $p < 0.001$), aggregation ($\beta = 0.397$, $p < 0.001$) and integration ($\beta = 0.144$, $p < 0.05$), thereby supporting the H1 hypothesis (H1a, H1b, H1c and H1d). A positive and significant relationship was also shown by PEU relationship to broad scope ($\beta = 0.417$, $p < 0.001$), timeliness ($\beta = 0.479$, $p < 0.001$), aggregation ($\beta = 0.426$, $p < 0.001$) and integration ($\beta = 0.698$, $p < 0.001$), thereby supporting the hypothesis H2 (H2a, H2b, H2c and H2d).

Figure 2 and table 5 also show a positive significant relationship, broad scope ($\beta = 0.188$, $p < 0.05$), timeliness ($\beta = 0.250$, $p < 0.001$), aggregation ($\beta = 0.177$, < 0.05) and integration ($\beta = 0.356$, $p < 0.001$) on organizational performance, thereby supporting the hypothesis H3 (H3a, H3b, H3c, and H3d).
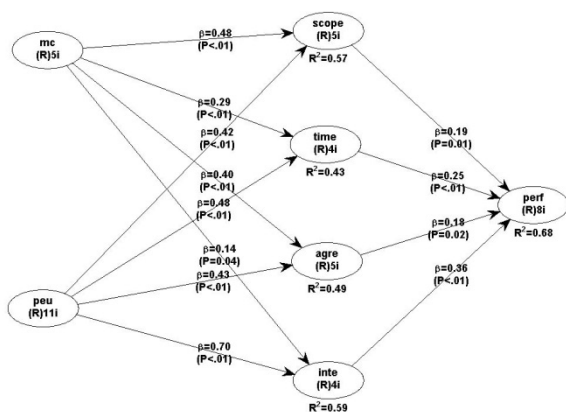

Figure 2. Full research model

Table 5. A theoretical model of the direct relationship of research variables

Independent Variable	Dependent Variable	Hypotheses	Relevant Path	Path coefficient	p-value	Remarks
MC	scope	H1a	MC→scope	0.475	<0.001	Supported
MC	time	H1b	MC→time	0.288	<0.001	Supported
MC	agre	H1c	MC→agre	0.397	<0.001	Supported
MC	inte	H1d	MC→inte	0.144	0.039	Supported
peu	scope	H2a	peu→s cope	0.417	<0.001	Supported
Peu	time	H2b	peu→time	0.479	<0.001	Supported
Peu	agre	H2c	peu→agre	0.426	<0.001	Supported
Peu	Inte	H2d	peu→inte	0.698	<0.001	Supported
scope	perf	H3a	Scope→perf	0.188	0.011	Supported
time	perf	H3b	Time→perf	0.250	<0.001	Supported
agre	perf	H3c	Agre→perf	0.177	0.019	Supported
Inte	perf	H3d	Inte→perf	0.356	<0.001	Supported

6. Discussion

The results of this study indicate a positive significant effect of MC on the utilization of SCM information, broad scope (Ha1), timeliness (H1b), aggregation (H1c) and integration (H1d), this provides empirical support for MC relations to the use of SCM information. The meaning of this finding is that when facing increased competition, hotels become less stable and managers are faced with market uncertainty, for that, they need more information. As such they will use SCM information, broad scope, timeliness, integration, and aggregation to assist in carrying out daily operations, as well as supporting business decision making for the benefit of the organization [3]. Whereas states when faced with increased market competition, the organization will utilize greater SCM information to formulate, implement and monitor its strategy to deal with competition. A sophisticated SCM is able to meet the information needs needed by three, four and five-star hotels in Bali Province, Indonesia. These results support previous studies in contingency theory [3, 8, 24, 25] and broad results for the hospitality service industry.

This study shows the positive and significant effect of PEU on the use of SCM information, broad scope (H2a), timeliness (H2b), aggregation (H2c) and integration (H2d), this provides empirical support for PEU's relationship to the use of SCM information. The interpretation of these findings is that when hotels perceive increased environmental uncertainty, they will need a wide range of information (external, non-financial and future-oriented information) to support decisions made. The speed of response is also very necessary when the environment is perceived uncertain, for that timely SCM information is needed. The need for aggregate and integrated SCM information is also increasing in order to make comprehensive decisions. As said by [20] bthe benefits of SCM increase with increasing environmental uncertainty. This study supports the previous study of [14, 28], but it contradicts the study of [12] who reported a negative relationship between PEU with broad scope SCM information, timeliness, aggregation, and integration.

In addition, the results of this study also showed a positive and significant influence on the utilization of SCM information, broad scope (H3a), timeliness (H3b), aggregation (H3c) and integration (H3d) on organizational performance. This indicates that the higher the use of SCM information, the broad scope, timeliness,

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aggregation, and integration of three, four and five-star hotels in Bali Province, Indonesia helps them in making more decisions thereby causing an increase in organizational performance. The findings of this study are consistent with previous research in the field of supply chain management [29].

7. Conclusions and implications

Acceptance of all proposed research hypotheses, this provides a better understanding of the relationship of contextual variables (MC and PEU), utilization of SCM information and organizational performance in the context of three-star, four-star and five-star hotels in the Bali Province of Indonesia. This study provides new insights to hotel managers about the important role of SCM information in improving hotel performance.

With the increasing MC and environmental uncertainty faced by the hotel industry in Bali Province, Indonesia today, to anticipate this situation a fast and appropriate response is needed by the management. For that, they need sophisticated SCM information. Sophisticated SCM information has the characteristics of broad scope, timeliness, aggregation, and integration. This information can be used to support planning, make policy revisions, make decisions and implement policies, thereby improving organizational performance.

This research contributes to the development of knowledge both theoretically and practically, however, there are some limitations such as, first this study only tests two contextual variables (MC and PEU), and secondly, the research sample is relatively small. For future research, it is suggested to explore other contingency factors. This research will also be interesting to do on other service companies such as banks and financial institutions, hospitals, insurance, construction services, and other services in the Indonesian context.

REFERENCES

[1] S. Shamim, S. Cang, and H. Yu, "Supervisory orientation, employee goal orientation, and knowledge management among front line hotel employees," *Int. J. Hosp. Manag.*, vol. 62, pp. 21–32, 2017.

[2] S.-H. Chung, Y.-F. Su, and Y.-J. Su, "Broad scope supply chain management system and managerial performance: The impact of role ambiguity and functional difference," *African J. Bus. Manag.*, vol. 6, no. 30, pp. 8873–8878, 2012.

[3] R. Ghasemi, N. A. Mohamad, M. Karami, and N. H. Bajuri, "The mediating effect of supply chain management system on the relationship between competition and managerial performance," *Int. J. Account. Inf. Manag.*, vol. 24, no. 3, pp. 272–295, 2016.

[4] G. Fleischman and K. Walker, "A field study of user versus provider perceptions of supply chain management system services," *Int. J. Account. Inf. Manag.*, vol. 18, no. 3, pp. 252–285, 2010.

[5] K. B. Walker, G. M. Fleischman, and E. N. Johnson, "Measuring supply chain management service quality," *Meas. Manag. Account. Serv. Qual.*, vol. 13, no. 3, pp. 15–27, 2012.

[6] A. Patiar and L. Mia, "The interactive effect of market competition and use of SCM information on performance: Evidence from the upscale hotels," *J. Hosp. Tour. Res.*, vol. 32, no. 2, pp. 209–234, 2008.

[7] R. H. Chenhall, "Management control systems design within its organizational context: Findings from contingency-based research and directions for the future," *Accounting, Organ. Soc.*, vol. 28, no. 2–3, pp. 127–168, 2003.

[8] Z. Hoque, "The relations among competition, delegation, supply chain management systems change and performance: A path model," *Adv. Account.*, vol. 27, pp. 266–277, 2011.

[9] M. Brandau, C. Endenich, R. Trapp, and A. Hoffjan, "Institutional drivers of conformity-Evidence for supply chain management from Brazil and Germany," *Int. Bus. Rev.*, vol. 22, no. 2, pp. 466–479, 2013.

[10] S. Mayr, "Supply chain management in eastern europe: Cultural influence and empirical evidence from Slovakia," *Int. J. Bus. Res.*, vol. 12, no. 3, pp. 161–169, 2012.

[11] K. Ismail and C. R. Isa, "The Role of supply chain management systems in advanced manufacturing environment," *Aust. J. Basic Appl. Sci.*, vol. 5, no. 9, pp. 2196–2209, 2011.

[12] S. A. Hammad, R. Jusoh, and I. Ghozali, "Decentralization, perceived environmental uncertainty, managerial performance and supply chain management system information in Egyptian hospitals," *Int. J. Account. Inf. Manag.*, vol. 21, no. 4, pp. 314–330, 2013.

[13] M. Heidmann, "The role of supply chain management systems in strategic sensemaking," *Role Manag. Account. Syst. Strateg. Sensemaking*, pp. 244–257, 2008.

[14] R. H. Chenhall and D. Morris, "The impact of structure, environment, and interdependence on the perceived usefulness of supply chain management systems," *Source Account. Rev.*, vol. 61, no. 1, pp. 16–35, 1986.

[15] J. C. Novas, M. do C. Gaspar, and A. A. Sousa, "The role of supply chain management systems in the development of intellectual capital," *J. Intellect. Cap.*, vol. 18, no. 2, 2017.

[16] P. J. Harris and J. B. Brown, "Research and development in hospitality accounting and financial management," *Int. J. Hosp. Manag.*, vol. 17, pp. 161–181, 1998.

[17] C. Ruhana Isa, S.-Y. Foong, and M. Sambasivan, "The roles of market competition and advanced manufacturing technology in predicting supply chain management and control systems change," *Asia Pacific Manag. Rev.*, vol. 10, no. 6, pp. 397–403, 2005.

[18] R. B. Duncan, "Characteristics of organizational environments and perceived environmental uncertainty," *Adm. Sci. Q.*, vol. 17, no. 3, pp. 313–327, 1972.

[19] C. Fisher, "The impact of perceived environmental uncertainty and individual differences on management information requirements: A research note," *Accounting, Organ. Soc.*, vol. 21, no. 4, pp. 361–369, 1996.

[20] A. A. Silva and F. C. M. Ferreira, "Uncertainty, flexibility and operational performance of companies: Modelling from the perspective of managers," *Rev. Adm. Mackenzie*, vol. 18, no. 4, pp. 11–38, 2017.

[21] K. Ismail, C. R. Isa, and L. Mia, "Market competition, lean manufacturing practices and the role of Supply chain management Systems (SCM) information," *J. Pengur.*, vol. 52, pp. 47–61, 2018.

[22] E. K. Laitinen, "A portfolio approach to develop a theory of future supply chain management systems," *EuroMed J. Bus.*, vol. 3, no. 1, pp. 23–37, 2008.

[23] D. Jiménez-Jiménez and R. Sanz-Valle, "Innovation, organizational learning, and performance," *J. Bus. Res.*, vol. 64, no. 4, pp. 408–417, 2011.

[24] L. L. Santos, C. Gomes, and N. Arroteia, "Supply chain management practices in the Portuguese lodging industry," *J. Mod. Account. Audit.*, vol. 8, no. 1, pp. 1–4, 2012.

[25] L. McManus, "Customer accounting and marketing performance measures in the hotel industry: Evidence from Australia," *Int. J. Hosp. Manag.*, vol. 33, pp. 140–152, 2013.

[26] F. A. Gul and Y. M. Chia, "The effects of supply chain management systems, perceived environmental uncertainty and decentralization on managerial performance: A test of three-way interaction," *Accounting, Organ. Soc.*, vol. 19, no. 4–5, pp. 413–426, 1994.

[27] L. Mia, "The role of SCM information in organizations: An empirical study," *Br. Account. Revies*, vol. 25, pp. 269–285, 1993.

[28] M. P. Mangaliso, "The strategic usefulness of management information as perceived by middle managers," *J. Manage.*, vol. 21, no. 2, pp. 231–250, 1995.

[29] H. Al-Mawali, "Performance consequences of supply chain management system information usage in Jordan," *Bus. Econ. Horizons*, vol. 9, no. 1, pp. 22–31, 2013.

[30] R. H. Chenhall and K. J. Euske, "The role of management control systems in planned organizational change: An analysis of two organizations," *Accounting, Organ. Soc.*, vol. 32, no. 7–8, pp. 601–637, 2007.

[31] A. Gnawali, "Supply chain management systems and organizational performance of Nepalese Commercial Banks," *J. Nepal. Bus. Stud.*, vol. 10, no. 1, pp. 8–19, 2017.

[32] E. A. Gerloff, N. K. Muir, and W. D. Bodensteiner, "Three components of perceived enviromental uncertainty: An exploratory analysis of the effects of aggregation," *J. Manage.*, vol. 17, no. 4, pp. 749–768, 1991.

[33] P. N. Khandwalla, "The effect of different types of competition on the use of management controls," *J. Account. Res.*, vol. 10, no. 2, pp. 275–285, 1972.

[34] D. Zeglat and K. Zigan, "Intellectual capital and its impact on business performance: Evidences from the Jordanian hotel industry," *Tour. Hosp. Res.*, vol. 13, no. 2, pp. 83–100, 2013.

[35] P. Tavitiyaman, H. Qu, and H. Q. Zhang, "The impact of industry force factors on resource competitive strategies and hotel performance," *Int. J. Hosp. Manag.*, vol. 30, pp. 648–657, 2011.

[36] S. Campo, A. M. Díaz, and M. J. Yagüe, "Hotel innovation and performance in times of crisis," *Int. J. Contemp. Hosp. Manag.*, vol. 26, no. 8, pp. 1292–1311, 2014.

[37] J. Hulland, "Use of partial least squares (PLS) in strategic management research: A review of four recent studies," *Strateg. Manag. J.*, vol. 20, no. 2, pp. 195–204, 1999.

[38] N. Kock, "Using WarpPLS in E-Collaboration Studies: An Overview of five main analysis steps," *Int. J. e-Collaboration*, vol. 6, no. 4, pp. 1–11, 2010.

[39] D.-G. Ko, L. J. Kirsch, and W. R. King, "Antecedents of knowledge transfer from consultants to clients in enterprise system implementations," *MIS Q.*, vol. 29, no. 1, pp. 59–85, 2005.

[40] Martynova, Y., Khabibullina, E., & Martynov, D. Nikolay Katanov's scientific journey to Eastern Siberia and Xinjiang (1889-1892).