

Intellectual Capital and Business Performance of Self-employers in Sri Lanka: An Empirical Investigation

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Abstract: This paper aims to explore the impact of intellectual capital on business performance of self-employers in Sri Lanka. The data were collected from 115 self-employers in *Ingiriya* Divisional Secretary Division in Sri Lanka. Partial Least Square - Structural Equation Modeling (PLS-SEM) was conducted to test research hypotheses. The findings revealed that human capital and relational capital have a positive and significant impact on the business performance of self-employers except structural capital. In particular, relational capital has the strongest and largest contribution to business performance. Thus, the study provided sufficient evidences to conclude that relational capital and human capital have a significant impact on business performance of self-employers in Sri Lanka. The study provides more important insights for the self-employers and policy makers to make strategies to strength the intellectual capital in order to achieve business performance.

Keywords: Business Performance, Human Capital, Intellectual Capital, Relational Capital, Structural Capital, Self-employers

I. INTRODUCTION

Intellectual Capital(IC) is becoming a most valuable asset for businesses and can be used as a sharpest competitive weapon to foster business performance(Stewart and Stephanie, 1994). This hidden asset is individuals, not the company and it controls the chief sources of competitive advantages as well as, at the same time knowledge employer will survive in his success than a tangible asset (Drucker, 1994). There are many varieties of perspectives which answer how is the IC developed? Stewart (1998), stated that IC is a brand-new tennis ball – fuzzy, but with a lot of bounce. This statement states that the IC is captured by the practitioners who are always finding solutions for more difficult challenges. It further implies that IC enhances the capacity, innovations, leading skills and overall performance of the persons (Edvinsson and Malone, 1997). Hence, the popularity of the topic is mainly come up in the business world with different perspectives. This is why the hidden asset or most recently, IC often says more about the capability of survival of a company than we currently use. So, the need of IC for a good self-employer is one of the most crucial factors behind his success than any other financial asset.

Due to the huge global competition in many industries around the world, achieving business performance is one of the main objectives of any firm. Researchers have found that in many firms' intangible assets (e.g. human capital and customer relationship) are the key factors that determine performance (Edvinsson and Malone, 1997). Previous researchers like Bontis (1998, 2000) endorse that there is a significant positive relationship between IC and business performance. IC is often identified as the value created by three types of intangible assets, that is, human capital (HC), structural capital (SC) and relational capital (RC) (Stewart, 1997). IC is not a new concept regarding organizations in the few decades that focuses upon large scale firms with the help of available resources. There are number of studies relating to IC regarding medium scale enterprises (Johan Roos et al., 1997), regarding banking sector (Bontis, 2003, 2009), regarding microfinance institutions (Kamukama, Ahiauzu and Ntayi, 2010). Most of the researches have focused on the developed countries unless regarding specially in self-employment in developing countries. Even though much IC researches have been conducted in various countries including the United Kingdom (Roos, 1997), Scandinavia (Edvinsson and Malone, 1997), Australia (Sveiby, 1997), Canada (Bontis, 1998; 2000; 2009) and the USA (Stewart, 1997), none have been made in Sri Lanka. There are no enough empirical evidences regarding how IC of self-employers affect their business performance particularly in Sri Lankan context. Therefore, the purpose of the study is to examine the effect of IC on business performance within the context of self-employment in Sri Lanka.

This paper is organized as follows: first, it reviews the literature on IC and its link with performance. Based on the literature review, hypotheses are formulated. Then the study describes the materials and methods and results are presented and discussed in the next section. Finally, it concludes the paper by reviewing its contributions and limitations and providing directions for future researches.

II. LITERATURE REVIEW

IC is the term given to the combined intangible assets of market, intellectual property, human-centered and infrastructure which enable the company to function

(Brooking, 1996). According to (Roos, 1997), IC includes all the processes and the assets which are not normally shown on the balance sheet and all the intangible assets (trademarks, patents and brands) which modern accounting methods consider the sum of the knowledge of its members and the practical translation of his/her knowledge. IC is intellectual material knowledge, information, intellectual property, experience that can be used to create wealth. It is a collective brainpower or packaged useful knowledge (Stewart, 1997). IC is the pursuit of effective use of knowledge (the finished product) as opposed to information (the raw material) (Bontis, 1998). IC is regarded as an element of the company's market value as well as a market premium. Rastogi (2003), states a comprehensive definition of intellectual capital 'as the holistic or metalevel capability of an enterprise to coordinate, orchestrate, and deploy its knowledge resources toward creating value in pursuit of its future vision'. Many of the researchers with regard to intellectual capital have been suggested over the past years. Most of them (e.g. Stewart, 1997; Fink & Zhou, 2003) have defined the term 'intellectual capital' as a combination of Human Capital (HC), Structural Capital (SC) and Relational Capital (RC). Human Capital Human capital is one of the important variables in the study of IC. It can be defined as the combined knowledge, skills and the abilities of employees to deal with the given task (Edvinsson and Malone, 1997). It includes some of the key elements such as practical knowledge, technical expertise, creativity, education and attitude, competence, experience and motivation (Marr, 2004). According to Skandia's model, human capital is directly related to the structural capital and relational capital.

Structural Capital: SC refers to supporting structures and conditions which enable HC to function. The term comprises the physical and non-physical infrastructure of the organization, that is, operational systems, processes, databases, strategic plans, patents, routines and information technology (IT). Roslender and Fincham, (2004) claim that SC also embraces key organizational attributes such as organizational culture, management structures and processes, knowledge networks and organizational philosophies.

Relational Capital: RC consists of all the business relationships in an organization with its different stakeholders, customers, investors, competitors or suppliers (MacDougall and Hurst, 2005; Marr, 2004; Gamage and Priyanath, 2019). Customer relationships (customer capital) are consequently only one part of these relationships. Recent work in the service profit chain has emphasized the causal relationships among employee satisfaction, customer satisfaction, customer loyalty and financial performance (Kaplan and Norton, 1996).

Business Performance: Business performance is defined as measurable result of the level of attainment of organizations goals or measurable result of the organization's management of its aspects (ISO 1999), or mechanism for improving the likelihood of the organization successfully implementing a

strategy. Business performance evaluation is the process to help management decisions regarding an organization's performance by selecting indicators, collecting and analyzing data, assessing information against performance criteria, reporting and communicating and periodically reviewing and improving this process (Ranatunga, Priyanath, and Megama, 2020). Summarizing the ideas of many authors, it can be stated that the roles of business performance evaluation are to ensure compliance with crucial minimum standards, to check how well organization are doing and it can be measured by profitability, productivity and market share which owns for particular organization (Firer and Williams, 2003).

Empirical Evidence: There were many researches that have been conducted relating the IC and its impact on organizational performance. For example, Bontis, (2003) conducted a study on the relationship between IC and organizational performance. In his study, Bontis conveyed that a mutual relationship exists among the elements of IC and it has a positive relationship with business performance. According to Youndt (2004), IC is the most critical factor which promoting organizational effectiveness as well as ensuring the survival of any organization. Mahoney and Kor (2015), claim that businesses increasingly understand how IC is important in creating economic value and power. Joia (2007) states that successful organizations of today, are those that recognize that intellectual capital plays an important role in creating value as well as leverage. In order to survive in the marketplace that has become more and more competitive, organizations need programs of continuous improvement so as to improve the competencies of the employees. Also, organizations need to have effective systems and processes that are effective and efficient (Nahapiet, 1998). Research conducted by the Organization of Economic Cooperation and Development, (2009) indicates that investing in IC brings about many benefits to an organization. Such benefits include more competent employees, motivated workers, increased customer loyalty, competitive advantage and better utilization of the company resources for a better outcome. Given the benefits that come about from investing in IC, the managers have to identify the intangible resources that are important in creating and maintaining a competitive advantage within the organization (Daum, 2003). The management can use the experiences of other organizations to gain knowledge of the IC. The recent studies by Iswati & Anshori (2007), Baum and Silverman (2004) and Bontis (2000) suggest that the existence of significant positive relationship of IC on business performance. Roos (1997) examines that the linkage between IC and the value creation process of a firm from a dynamic perspective. The author provides important insight regarding the influence of IC on value of the firm.

Iswati & Anshori (2007), Baum and Silverman (2004), studied the relationship between intellectual capital and business performance. They have conducted the study in Indonesia, China, Taiwan and Greece respectively. Most of the scholars provide theoretical base for the research taking

intellectual capital as the explanatory variable and the business performance as the dependent variable. A few apply the theory for intellectual capital on financial performance (Tan and Hancock, 2000 and Bontis, 2009). Majority of empirical studies have adapted the quantitative method as the research approach. For example, Iswati and Anshori (2007), Baum and Silverman (2004) have applied quantitative researches while Edvinsson (1996), Brennan (2000) have adapted both quantitative and qualitative approaches for the research. Most of the above scholars have taken 100-170 companies as their sample and they have gathered data mostly from mailed questionnaire and field surveys.

III. CONCEPTUAL RESEARCH MODEL AND HYPOTHESES

According to the literature, IC is composed of three forms; human capital, relational capital and structural capital. Each element has direct influence on performance. In this study, IC of self-employers is taken as the explanatory variable. It is divided into three main categories such as Human Capital, Structural Capital and Relational Capital. Human capital is measured by dimensions of education level, experience, creativity, practical knowledge and technical expertise. Structural capital is measured by operational systems, databases, strategic plans, and organization culture and information technology. In order to measure the relational capital, this study uses customer relationship, supplier relationship, impact of competitors and financial institutions relationship. Business performance is the dependent variable in this study, while it focuses on the dimension of cost income ratio in order to measure the business performance. The study constructed three hypotheses connecting with those variables.

Intellectual capital and Business Performance

The role of intellectual capital acts as the most important source of competitive advantage for the firm and it is one of the primary factors of the profitability of a firm (Grant, 1991). According to Marr (2004), intellectual capital contributes to improve the competitive position of a firm. As well as, it is a key factor of effectiveness and efficiency of the organization (Marr, 2004). In brief, components of the intellectual capital (HC, SC and RC) are the basis for the sustainability of business advantages (Kannan and Aulbur, 2004). Business Performance is another major concept in economic field. Initially, it was strictly from the financial perspective, but this concept has gradually become as a hidden asset (Marr 2004). Non-financial performance implies innovations, leadership and competitiveness, operationalized as sales growth and overall response to competition.

Human Capital and Business Performance: HC is identified as the central component of IC, comprising the knowledge, skills, experiences and abilities of the members of the organization (Edvinsson and Malone, 1997; Roslender and Fincham, 2004). In nature, HC is inseparable from its owner (Fernandez, 2000) and is not fully controlled by the firm.

Traditionally, IC has a positive relationship with business performance. More recently, the impact of effective human capital resource practices positively with business performance through their development and motivation (Youndt et al., 1996). Selecting the best people for the firm with proper skills and attitudes is critical for the firm. Besides this, knowledge, experience training and expertise handle a major roll (Chen and Huang, 2009). For any firm, losing an expertise, knowledgeable individual is highly affected to the profit of the firm (Stovel and Bontis, 2002). Tseng and Goo (2005) conclude that HC has a positive influence on business performance directly affecting to the value creation. Wang and Chang (2005) state that HC is the crucial role of IC affecting both innovations and experience. Considering the above views on HC on business performance it is assumed that HC will play a predominant role on performance. Against this background, it is hypothesized that;

H1: There is a positive relationship between HC and BP of self-employers in Sri Lanka.

Relational Capital and Business Performance: RC refers to the ability of a firm to interact with external stakeholders (such as customers, suppliers, competitors, trade and industry associations) as well as the knowledge embodied in these relationships (Bontis, 1998; Edvinsson and Malone, 1997). In the business world, association with external parts is very essential for the survival of the firm. Specially, any firm is reputed with the image the firm gives for the external parties. Therefore, RC is another key component of IC (Bontis, 2002). Selling a product to the existing customer is mainly depend on the three factors such as customer loyalty, satisfaction and trust. Satisfaction depends on how products meet customer expectations. Commitment is a vital factor of successful relationships leading to loyalty (Berry and Parasuraman, 1991). Trust with the good relationship mainly affects to the strengthening of the firm (Chaudhuri and Holbrook, 2001; Priyanath and Premaratne, 2017). In the self-employment business process relationship with suppliers, financial institutions and competitors will highly affect to the market share of the firm (Chahal and Bakshi, 2016). Hence it can be concluded that RC also plays a major role in the IC. Against this background, it is hypothesized that;

H2: RC has a positive impact on BP of self-employers in Sri Lanka.

Structural Capital and Business Performance: SC is identified as the infrastructure that improves the human resource to create value addition through a strong operational and institutional system (Edvinsson, 1996). At the same time, it represents the backbone of the organization. Unlike HC and RC, SC is owned by the firm that encompasses information systems and databases, culture, procedures, patents, trade mark (Priyanath, 2017). These components facilitate intra-firm co-ordination and cooperate culture (Band, 1991, cited by Moon and Kym, 2006). In contrast, ICT is one of the major services of forecasting and further analysis. Gago and

Rubalcaba (2007) indicate that ICT act as innovative method of innovation and co-creation process between clients and suppliers. ICT gain competitive advantage by adding value to customers through online processes. ICT lead to productivity to the firm through networks of customers and suppliers (Bontis, 2002). According to the above views, it can be concluded that SC is directly as well as indirectly associated with the business performance of self-employers. Accordingly, following hypothesis is proposed.

H3: There is a positive relationship between SC and BP of self-employers in Sri Lanka.

IV. MATERIAL AND METHODS

This study used quantitative research designs to address the hypotheses. Data was collected using survey method through a questionnaire. Population in this study is self-employers in Sri Lanka. Kalutara District was selected randomly as the sample frame using simple random sampling method of lottery method among 25 Districts. Sample selection was based on Multi stage sampling method. *Ingiriya* Divisional Secretariat Division (DSD) was selected randomly from 14 DSs in Kalutara Districts and finally 160 self-employers were selected as the sample based on the sample size determination table developed by Krejcie & Morgan, (1970). Then, the sample was distributed in each village of *Ingiriya* DSD according to the percentage share of self-employers.

Using two step procedure, the questionnaire was developed. Initially, it was designed by carefully selected items reviewing literature for all the dimensions in constructs. Then a pilot survey was conducted prior to the original questionnaire in order to identify whether the questionnaire is fitted to achieve the research problem; whether it is understood by the respondent as well as whether it is clear and accurate to gather relevant data. This process helped to increase the validity and reliability of gathered data. The unit of analysis was the self-employer and data were collected through face to face interviews. The questionnaires were distributed among selected self-employers. From them, 115 respondents responded while eleven questionnaires were not selected due to incomplete information. A rate of more than 70% of the sample had been responded for the questionnaire. Partial Least Square - Structural Equation Modeling (PLS-SEM) was used to test the hypotheses because it helps to examine the interrelationship between dependent and independent variables (Cooper and Schindler, 2011). Measurement model was used to test the reliability and validity, and the efficiency of the structural model was tested by multi-collinearity issues, R^2 and predictive relevance (Q^2). The smart PLS (version2) software was used to analyze data.

Operationalization of study variables was based on previous studies and the review of the existing literature. The measurement items used in the study was based on Likert scale (1 – Strongly disagree; 2 – Disagree; 3 – Somewhat disagree; 4 – Neither agree nor disagree; 5 – Somewhat agree; 6 – Agree; 7 – Strongly agree) developed by Rensis Likert (1930). Each respondent was asked to response using this ranking.

Intellectual capital was sub-divided into three elements: human capital, structural capital and relational capital (Bontis, 2002; Stewart, 1997). Each dimension was measured basing on the works of other scholars and modified to match with the self-employers context. Human capital was measured using the dimensions of education level, practical knowledge, technical expertise, creativity and experience (Sveiby 2001, Petty and Guthrie, 2004). Each element has its sub elements in order to get a clear idea about the dimension including nine questions in the questionnaire. Relational capital was measured using a combination of dimensions developed by Edvinsson and Malone (1997); Rindfleisch and Moorman (2001), Huang and Chang (2007). The main aspects of RC were customer relationship, supplier relationship, financial relationship and relationship with competitors. These were measured asking ten questions covering all the aspects. Several aspects to measure structural capital included organizational culture, operation system, database, strategic plans and information technology (Brooking, 1996; Sveiby, 1997; Bontis, 2002; Wang and Chang, 2005). Data for each and every element was collected asking eight questions. Business Performance was measured by using cost benefit ratio, market share and ability to repay for financial assistance (F-Jardon and Martos, 2009). These data were collected using four questions.

V. RESULTS AND DISCUSSION

As shown in the table 01, outer loading values of the dimensions of constructs were higher than 0.7 which describes that all the under the analysis have indicator reliability. As well as all the T- statistics values were significant at 95% significance level implying that all values are higher than 1.96. Then it is clear that both tests satisfy the indicator reliability of the constructs. When considering about the internal consistency reliability, mainly, there are two measure to identify the reliability. One is Cronbach's alpha test and the other one is composite reliability. The values of these two tests should be 0.7 or higher than it. Hence it proves that a strong internal consistency reliability exists in the model.

Table: 01 Reliability and Validity of Constructs

Construct	Loadings	T- statistics	CR	α^*	AVE
Human Capital			0.948	0.937	0.694
Education Level	0.820	35.284			
Having new creative idea	0.811	34.868			
Value Added products	0.815	37.657			
Upgrading practical knowledge	0.808	38.972			
Ability to achieve targets	0.829	43.553			
Using good advertising methods	0.849	42.282			
Technological innovation	0.838	44.227			
Guessing future problem currently	0.836	47.526			
Reducing unnecessary cost	0.878	57.173			
Relational Capital			0.947	0.936	0.664
Customer Satisfaction	0.858	54.871			
Good responding for customers	0.857	51.916			
Longevity of the relationship	0.819	36.536			
Customer loyalty	0.816	38.188			
Quick transaction with suppliers	0.825	37.225			
Continuous deals with suppliers	0.796	37.361			
Good financial assistance	0.754	28.680			
Caring rules of government	0.816	42.437			
Knowledge about competitors	0.828	50.270			
Threat from competitors	0.793	39.574			
Structural Capital			0.941	0.928	0.667
Efficiency of operational system	0.866	50.267			
Contribution for a better profit	0.869	55.288			
Advancement of database	0.761	27.843			
Support from new experts	0.769	27.734			
Having good strategic plan	0.745	24.052			
Ability to face competitors' threats	0.878	55.743			
Gathering accurate data from IT	0.807	33.730			
Pride of organization culture	0.827	31.664			
Business Performance			0.909	0.866	0.715
Cost Benefit ratio	0.776	30.104			
Growth of C/B ratio	0.893	73.685			
Strong capital and finance system	0.835	44.630			
Having a higher market share	0.875	61.388			

α^* - Cronbach's alpha

Source: Survey Data, 2020

Average Variance of Extracted (AVE) was used to measure convergent validity of constructs. The value of AVE should be higher than 0.5 in order to have the convergent validity of the analyzed data. According to the values of AVE (Table

01) it can state that there is a strong convergent validity in constructs. According to the discriminant validity of the measurement (Fornell & Larcker, 1981) the square root of AVE should be higher than other correlation values among

the latent variables. Table 02 demonstrates that square root of AVE values of constructs were higher than the other correlation values among latent variables.

Table 02: Discriminate Validity of Constructs

	AVE	BP	HC	RC	SC
BP	0.715	0.846			
HC	0.694	0.823	0.834		
RC	0.664	0.702	0.812	0.815	
SC	0.665	0.729	0.722	0.781	0.817

Source: Survey Data, 2020

The results of the structural model were generated using steps recommended by Hair et al. (2014). Initially the issue of multi-collinearity was assessed in the structural model of the study. VIF values for all paths show least co linearity ranging from 3.448 to 4.142. These values are significantly less than the recommended threshold value of 5.00. As well as the tolerance value was ranging from 0.241 to 0.290 exceeding 0.2. This means an absence of multi-collinearity between the independent variables and the dependent variables in the

structural model. Then, the significance of the path coefficients was measured to identify the effect of IC on BP. Each path relationship represents the regression coefficient (β). T-statistics was generated to evaluate the significance of the path coefficients (β) using PLS bootstrap process. The study tested empirically three hypotheses among IC bad BP. As shown in the table 03, two hypotheses were statistically significant (H1, H2) at 1 percent ($p > 0.01$).

Table 2: Path Coefficients and significance among Constructs

Hypothesis	Relationship	β	T- statistics	Result
H1	HC ->BP	0.289	4.958**	Accepted
H2	RC ->BP	0.721	11.776**	Accepted
H3	SC ->BP	-0.071	1.633**	Not accepted

**p > 0.01 (n=104) R²=0.636 Q²=0.593

Source: Survey Data, 2020

Results of the study states that there is a positive relationship between human capital and business performance of self - employers. In here, path coefficient is recorded as +0.289 between them. This means the development of human capital will increase the business performance by 0.289 amount. T-statistic value is higher than 1.96 (also for 0.01 level) suggesting that there is a significant positive relationship between HC and BP. Therefore, hypothesis H1 was accepted. As well as similar previous study in the literature, have provided similar findings for this. Scholars, Mention & Bontis (2012) stated that that human capital contributes both directly and indirectly to business performance. All dimensions of IC have a positive and significant impact on the business performance. Another researcher Walker (2001) which uses three dimensions to measure business performance. He found that there is positive relationship between human capital and business performance for both low knowledge based corporate and high knowledge based corporate.

As well as path-coefficient between relational capital and business performance was recorded as +0.721 indicating a positive relationship between two. This value indicates that

improving relational capital of self- employer, will lead to increase the business performance by 0.721 amount. It generated a significant T-statistic value at 0.01 and 0.05 as well accepting the H2 that relational capital is positively related to the business performance. Similar findings were in the past researches. Ahmad & Mushraf (2011) stated that there is a significant positive relationship between relational capital and business performance as well as relational capital further affected on human capital and structural capital. However, according to Silvia (2013), the development of companies is influenced by the human and the structural capital while profitability is additionally linked to the financial capital through the value-added intellectual capital coefficient. According to Kamukama & Ntayi (2010), they found similar results to this study that they state relational capital is the most crucial factor that affected on intellectual capital.

Structural Capital as an independent variable, shows a negative relationship (-0.071) with business performance. Developing a well performed structural capital will decrease the business performance by about 0.071. Thus, T- statistic value is less than 1.96, indicating there is no significant

relationship between two. Then the hypothesis H3 is not accepted. However, there is no similar previous studies which could have gained these results in those studies. It could be seen that most of the previous researches are based on large scale industries hence, it needed vast structural capital within the organization. Ziglat & Zigan (2014), found that all dimensions of IC have a positive and significant impact on the business performance of Jordanian hotels. In particular, structural capital as one of the intellectual capital dimensions had the strongest and largest contribution to business performance. This finding was specially related to the hotel industry and due to vast requirement of structural capital on hotel industry, it mainly causes to determine the performance of hotel industry. In this case the finding is somewhat different because it involves with the very small firms hiring individually. Menton and Bontis (2012) states that human capital contributes both directly and indirectly to business performance in the banking sector. Structural and relational capital are positively related to business performance, though results are not statistically significant.

VI. CONCLUSION

The study has identified that improvement of human capital and relational capital to strength the business performance not only the side of tangible asset but also on the side of intangible asset. Although relational capital is the crucial factor of the IC as this study, it does not much require structural capital for self-employers in Sri Lanka. The main finding of this study is that the dimensions of HC and RC are positively impacted to the business performance of self-employers while SC has a negative impact on BP. This study contributes to extant research by analyzing the relationship between IC and BP. The study has addressed empirical issues or matters that have been all long not attended to by the literature more especially in self-employers. Also, the study has attempted to disprove whether the theoretical underpinnings are empirically supported in self-employment. Consequently, the study has contributed to enduring intellectual capital debate in the field of business performance of self-employers. Although many scholars have different views on intellectual capital dimensions, this study has ascertained that it is a multi-dimensional predictor encompassing human capital, relational capital and structural capital. Findings on multiple effect of intellectual capital elements on business performance on self-employers have thus shown the substance of different intellectual capital combinations or blend; thereby enabling this study to address the confusion or contradictions that exist in the literature. The study has conveyed some practical implications regarding self-employment especially regarding the improvement of better relational and human capital within their firms. Giving a higher emphasis on structural capital is not necessary regarding this case. Furthermore, it encompasses the requirement of better intellectual capital dimensions to improve the business performance of the self-employers.

Regarding this study, it mainly considers about a particular area for the study hence it gives the nature of that particular area regarding self-employers. One of the possible reasons for the varied results of the study is the methodology used for measuring intellectual capital. Although the constructs have been defined as precisely as possible by drawing relevant literature and validated by practitioners, the measurements used may not perfectly represent all the dimensions. Despite possible limitations of using single-period data, the results of the present study provide valuable insights into the effect of intellectual capital on business performance of self-employers.

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