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ELEVATING THE UNIVERSITY-INDUSTRY ENGAGEMENT THROUGH SME EMPOWERMENT FOR BUSINESS SUSTAINABILITY

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ABSTRACT

Despite the many critics about the universities-industries gap, the efforts seen to address the shortcomings are still insufficient. While SMEs stimulate the local economy, their sustainability are always at stake. On the other hand, universities are seen as knowledge and training-based contributors to ensure these SMEs survival. Thus, this study aims to analyse the association between SMEs' revenue and university contribution in terms of marketing, consultancy, human resource, and trainings. Three branch campuses in the southern region of Malaysia were chosen to represent Universiti Teknologi MARA (UiTM) for this study. A questionnaire survey was conducted based on stratified sampling among local SMEs within 10km radius from the university campuses. This study includes both descriptive and inferential statistics. In terms of inferential statistics, regression analysis was performed to further examine the effect of SMEs revenue with other exploratory UiTM-SMEs contribution variables (marketing, consultancy, HR, trainings) while controlling the effect of SMEs' ownership type, staff number and business age. The findings of these final 209 SMEs responses revealed that there is a significant association between the university's contribution in terms of marketing and training to SMEs' revenue. The results show that SMEs revenue is significant to the marketing and trainings that is provided by UiTM. These results shed highlight to the policymakers of the institutions to get a more in-depth understanding and to promote further university-industry collaboration and initiatives for business sustainability.

Keywords: Business Sustainability, Entrepreneurship, Small Medium Enterprise (SME), University-Industry Engagement

INTRODUCTION

SME or Small Medium Enterprise has been exponentially growing within recent years in the country and contributes 36.6% of Malaysia's Gross Domestic Product (GDP) in 2016. 98.5% of the business establishments in Malaysia are SMEs, with a total of 907,065 in quantity, cutting across all sizes and sectors (Economic Census 2016, Profile of Small and Medium Enterprise). The main economic sectors of SMEs in Malaysia are services, manufacturing, construction, agriculture, as well as mining and quarrying (Department of Statistics, 2019). The survival of Small and Medium Enterprises (SMEs) is so vital to stimulate the healthy business and economics maintenance (Zakaria, 2009).

In the context of Malaysia, the states with the most percentages of SMEs are Selangor (19.8%), Federal Territory of Kuala Lumpur (14.7%), Johor (10.8%), Pulau Pinang (7.4%),

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and Sarawak (6.7%). There are also various initiatives and programs introduced by the government in supporting the establishment and development of SMEs, which are evident since the 1970s (Saleh & Ndubisi, 2006). This in return contributes to the positive development of the economy in Malaysia, similar to the situation in Thailand, where SMEs play an important role in the country's economic development (Chittithaworn, Islam, Keawchana, & Yusuf, 2011). Furthermore, SMEs are also expected to be a crucial aspect of economic growth, employment creation, and transformation towards developed countries (Gunto & Alias, 2013).

Many aspects are involved when it comes to the development of SMEs, as well as in ensuring the survival of the business. Ng (2012) summarized various factors for enterprise success, and they can be both tangible (measurable) and intangible (not directly measurable) as suggested by (Lönnqvist, 2002; Williams, 1998). Some examples are networking, product, ability to focus on market, customer, new product development, financial performance, objective market acceptance, subjective market acceptance, customer acceptance, customer satisfaction, product performance, and quality, among others. Moreover, not all SMEs in Malaysia are obliged to undergo audit for their annual return as this can be a financial check and balance in terms of their performance and going concern (Azmi, Samat, Zakaria & Yusof, 2013) especially by the quality auditors.

With relation to new product development, Yi, Han & Cha (2018) found in their studies on the effects of entrepreneurship of SMEs from the perspective of South Korean industries, that innovativeness had a positive effect on marketing capability. The critical relationship between the entrepreneurial and innovation aspects was also mentioned by Sumiati (2020) in her study from the perspective of SMEs in Indonesia. The finding of the study highlights the importance of innovation for SMEs in improving their quality hence helping them to stay relevant when it comes to competition with the other enterprises. This is where engagement with the community, specifically universities will play its role to further elevate business sustainability in the long run, as it was concluded that improvement of business performance is positively related to innovations done by the industries.

The community which makes a large section of business customers is one important factor that leads to the development and success of the enterprises, and university as a part of the community is in a way related to it. Universities or higher learning institutions in general operate as a fully integrated community, interdependently with the local, regional, and global communities (Cortese, 2003). Aside from university-industry knowledge exchange linkages, or the capability of 'knowledge economy' as mentioned by Acworth (2008), being a part of the community makes university as one of the main aspects in economic development within the area.

Nguyen & Nguyen (2020) highlight the positive outcomes of links and collaboration between enterprises and universities, which includes the aspects of training and talent hiring. Focusing specifically on the perspective of tourism development, the factors of process, contextual, organizational, co-operation and benefit were analysed, and the first two were found to be the most critical factors in collaboration between the two parties. Crucial business performance and default risk (Zakaria, 2012) could also be clearly seen when enterprises are guided by universities expertise.

As SMEs are also a part of the local community, they are also related to the university community, comprising both the staff and the students, who are also the customers of the enterprises in the nearby areas. In a way, the existence of a learning institution in a community is seen as one factor that leads to the positive development of the SMEs, as they are the customers and end-users of the services provided by the SMEs.

As one of the public higher learning institutions in Malaysia, Universiti Teknologi MARA (UiTM) is considered a huge with mass faculties. There are 35 campuses all over the country, with at least one campus in every state (except the Federal Territories). Currently, the institution is the home to some 170,000 students and more than 17,000 staff (University

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Transformation Division, 2020), which makes it the largest higher education institution in Malaysia. In general, the campuses are located in various areas in the states, with most of the locations are at the outskirts of the city or even some rural areas. The staff and students live either on campus or in the housing areas near the campus. Either way, the university community forms a group which contributes to the dynamics of the bigger community that they live in. The location of UiTM campuses in a way plays its role in contributing to the development and success of the local SMEs, as the community in the institution is also the customer of the enterprises. Hence, the choice of selecting UiTM as the research setting in this study could be meaningful as its appearance covers all states in Malaysia.

However, the gap between university and industries or communities is a long-debated issue. Communities hardly reach the university and vice versa. While there is nothing new about the interaction between the academic institution and the industry (Etzkowitz, 2001; Feldman & Desrochers, 2004), the detailed ways on how the interaction translates into measurable result, especially to the community is still considered new (Philpott, Dooley, O'Reilly & Lupton, 2011). In addition, there is insufficient empirical evidences provided by prior researchers about the contributions provided by the universities to communities especially in aiding them to generate income and prolong life survival.

Klofsten & Jones-Evans (2000); Louis, Blumenthal, Gluck & Stoto (1989) highlight the spectrum of the entrepreneurial activities' contribution, which categorized into hard and soft initiatives. Hard activities (such as patenting, licensing and spin-off firm formation) are generally perceived to be the outputs which are more measurable (Rasmussen, Moen & Gulbrandsen, 2006) and more often viewed as having more entrepreneurial nature as compared to the softer initiatives (academic publishing, grantsmanship and contract research) which in certain cases is even perceived to have minimal entrepreneurial values.

Furthermore, the issues such as minimal technology transfer via patenting, patents as one of the very least used platforms by research groups (Agrawal & Henderson, 2002) and minimal values offered by patent protected inventions dues to the immaturity of commercial aspects as well as insignificant royalty generations are also highlighted when it comes to academic institutions' contribution to the industry and community (Philpott et al., 2011). Even with the more feasible ways to transfer their expertise to the industry and community, such as publication, conference and consultation (Cohen, Nelson & Walsh, 2002), as well as trainings, attachments, certified partners accreditation and dedicated innovation program as the initiatives to enhance academics' entrepreneurial knowledge and experience (Rahim, Chik, Bahari, Salleh & Bakri, 2015), the gap has brought down the community's intellectual expectation from the universities. While universities academicians work within their networks and counterparts, the surrounding communities are left behind.

This study is categorized into a few sections. Following this section is a review of prior studies discussing the findings within the research area. The Methodology section highlights the sampling technique, SMEs categories, respondents' locations, and related tests conducted. The next following section is the findings and discussions on the results gathered. Finally, a conclusion section concludes the overall study.

LITERATURE REVIEW AND HYPOTHESIS

Khalique, Isa, Nassir Shaari & Ageel (2011) have confirmed that there is no explicit worldwide definition of Small and Medium Enterprises (SMEs). Therefore, they alternatively defined SMEs in Malaysia by referring to their annual sales turnover and the total number of full-time employees. According to Small and Medium Enterprises Corporation Malaysia (SMECORP, 2008), enterprises that hire between 50-150 full-time employees fall into medium enterprises category, while those who hire between 5-50 employees are under small enterprises category and last but not least, enterprises who hire less than 5 employees are

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called micro enterprises. These SMEs are also alternately referred to as medium-sized companies, small enterprises, and micro-enterprises.

The role of SMEs in enriching the economic development is extensively acknowledged as they cover vast aspects of the manufacturing sector involving processing and production of raw materials such as food, beverages, rubber, wood, and other essential materials. According to the figures recorded by the Malaysian Ministry of International Trade and Industry (MITI) (2019), SMEs' contribution to manufacturing amounted to 20% of the GDP, in 1991. The figure was further supported by Kassim & Sulaiman (2011), as they observed that SMEs contributed to the manufacturing sector by 3.12% to total employment and they are expected to rise significantly in future.

However, some SMEs in Malaysia are facing challenges, for instance lack of knowledge in marketing techniques, branding, and customer loyalty, which resulted in competitive disadvantage and losing out good opportunities (Alam, Jani, Senik & Domil, 2011). The recent research by Ambad, Andrew & Amit (2020) has also encapsulated several barriers intruding the performance of SMEs which are financial constraints, human resources issues, lack of creativity and innovation, poor marketing strategies, and issues with the suppliers. As a result, university-industry engagement is appreciably viewed as the way to foster SMEs in fighting those barriers.

University-industry engagement is tightly associated with scientists' attachment to companies, consultations, industrial training for students, marketing courses, knowledge transfers activities, and other relevant programs (Yee, Chong & Kendall, 2015). The researchers further mentioned that a successful university-industry engagement lies on their mutual trust that each of them can contribute to one another. Furthermore, Lavie, Haunschild & Khanna (2012), suggested that the institution and organisation who are involved in university-industry engagement celebrate each other's routine and culture in fostering positive trust and commitment.

By adopting a multilevel approach, Messeni & Murgia (2021) revealed the significant role played by SMEs' absorptive capacity, as well as by social and geographical proximity between their partnering organizations. Their results further showed the positive impact of the regional knowledge spill overs that are close to the technological fields of the innovations developed. Their findings provided a better understanding of interactive learning in R&D collaborations between universities and SMEs, explaining how it may be further nurtured by knowledge spill overs available in SMEs' Regional Innovation Systems (RIS).

According to Hamdan, Yusof, Omar, Abdullah, Nasrudin & Abullah (2011), universities must step out from their traditional roles of merely producing graduates to be more relevant and progressive in serving the industry. The synergy created between university and industry engagement can greatly foster Malaysian economic development. Studies have proven that the prosperous economy of Malaysia can be celebrated with the existence of close university-industry engagement as it can gain a plethora of benefits through the execution of knowledge transfer, research and development, innovation and commercialisation programs.

Higher education providers have the greatest challenge to equalize graduates' knowledge and skills with existing employment opportunities while it is known that SMEs are job creators in the economy and a crucial contributor to sustainable development. If the education system of higher education in management does not withstand society future needs, this will impair the social, economic, and environmental conditions of the country. Thus, for longer sustainability, management graduates who will be future managers should be educated well with the needed skills and knowledge through a sustainable curriculum, which can be enriched with the linkage with the SMEs during study, a milestone for business start-up, employment opportunities, and industry intakes (Shivany, 2021).

One of the efforts executed by the UiTM researchers; Asri, Chik, Rais & Othman (2020) has highlighted the importance of remarkable packaging among the SMEs products,

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especially food and beverage in attracting potential customers and encouraging repurchase intention among them. In short, this is one of the possible supports that could be offered by the university-engagement programme with the SMEs.

Some of the critical reasons for the university-industry engagement to be elevated were well explained by Abdullahu, Tobi & Masrom (2017) by listing the perceived benefits of Malaysian university-industry engagement. Normah (2011) as cited in Abdullahu, Tobi & Masrom (2017), scholars claim that as universities are contributing to providing human capital for the industry to use it to run their business, they are irrefutably supporting each other. In addition, Othman and Omar (2012) found a big gap in reference to university-industry engagement especially at the micro level as both parties were hesitant to mutually work together. This could be resulted from the less exposure attainment in terms of the possible contributions that can be offered by them.

However, Malaysia is not the only country which promotes the university-industry engagement through Small and Medium-sized Enterprises (SMEs). Based on the study conducted by Mitanoski, Kojić, Jakšić & Marinković, (2013) SMEs were considered as the main generators of new jobs and a power for fighting unemployment. They have also highlighted that a strong collaboration between university and industry is the support centre that can benefit not only the new jobseekers, but also the existing headhunters.

Mutual collaboration between university and industry is demanded in uplifting the skills of the university's committee as well as the industry's revenue. In reference to the statement, Salleh & Omar (2013) have established a model of three main components namely university, government, and industry as the effort in attaining a successful engagement between university and industry. Their findings have also emphasised the university's role in providing talented prodigy to embark on the alliance, while the SMEs can provide the training programs, knowledge transfer, consultation work and commercialisation with the formidable support from the government.

Since boosting economic growth is one of the university's objectives when engaging with the SMEs, entrepreneurship education has been acknowledged as a prominent integral part of the national agenda in Malaysia. Consequently, an entrepreneurship centre has become a must in every public university which is closely monitored by the Vice-Chancellors of Universities through their KPIs evaluation (Ngah, 2018).

In addition, a study conducted in Turkey by Temel, Scholten, Akdeniz, Fortuin & Omta (2013) revealed that the role of innovation and university collaboration in advancing the profit of SMEs is highly looked upon if the effort and commitment offered reach its greatest level. This suggests that most companies are intolerable to mischievous proposals or commitment shown by the university especially in dealing with the current fierce market competition. In other words, it is the responsibility of the university to appear relevant to the industries while proposing and executing their intended contribution. University is merely seen as social contributors to local surrounding SMEs across their financial performances. Hence, this study hypothesizes that;

*H1**:** There is a significant association between SMEs' revenue across university contributions.*

METHODOLOGY

A survey was conducted among local SMEs within a few different districts corresponding to UiTM southern branch campuses – Johor, Melaka, and Negeri Sembilan. For each branch, about 100 questionnaires were distributed based on stratified sampling methods. SMEs category varies from sole proprietor, partnership to private limited. A final of 209 SMEs responses were recorded to be further analysed.

Descriptive analysis, bivariate, and multivariate tests took place in order to serve the final findings of this study. A hypothesis was developed to analyse the association of SMEs revenue to UiTM contribution to SMEs namely marketing, consultancy, human resource, and

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trainings while controlling the effect of ownership type, staff number and business age. A model was established for this.

$$\text{Revenue} = \beta_0 + \beta_1\text{marketing} + \beta_2\text{consultancy} + \beta_3\text{HR} + \beta_4\text{trainings} + \beta_5\text{owntype} + \beta_6\text{staffnumber} + \beta_7 bi\text{sage} + e \quad (1)$$

FINDINGS

Table 1, panel A presents the results of the continuous variables among respondents under the descriptive discussion. For SMEs revenue, the maximum recorded is RM5 million while the average is RM208,537. In terms of reliance of these SMEs' revenue to UiTM, there are a few numbers of respondents rely on 100% to UiTM for their business survival. The highest number of staff is 57 staffs while the smallest number is 1. This shows that at least a helper is needed to help running the business. This could be a small size of business. The business age ranges from the maximum of 50 years to a minimum of 1 year old.

Table 1
PANEL A: RESPONDENTS' DESCRIPTIVE RESULTS , N=209

Variable	Minimum	Maximum	Mean	Std. Dev
Revenue	10500.00	5,000,000.00	208,537.58	77928.38
Perctincuitm	1.00	100.00	40.85	28.54
Staffno	1.00	57.00	5.67	7.56
Bisage	1.00	50.00	9.90	9.64

Revenue is the gross income of the SMEs. Perctincuitm is the % of revenue that were derived from UiTM. Staffno is the number of staff hired while Bisage is the age in number of years for the business since its establishment.

From Table 2, panel B, more than three quarter (78%) of the respondents' business ownership type is sole proprietorship while 9% partnership business and o13% are registered as Sendirian Berhad SMEs (private limited). Vast majority (86%) of these SMEs however did not hire any UiTM alumni as their staff. Majority of these SME business (94%) found that UiTM appearance really influences their business. This may imply that UiTM is so substantial to these SMEs growth and income. About one third (35%) of respondents feel that UiTM minimally affect their business while another roughly one third (38%) feels that UiTM affected their small and medium businesses. 24% of the respondents feel that UiTM severely affect their business which imply that the non-existence of UiTM may force them to shut their business operations. In terms of marketing contributions that UiTM has provided to these SMEs; two distinct answers are recorded. 42% said that UiTM just gave low marketing contribution to them while 39% said that UiTM gave a very high marketing contribution to their businesses. For consultancy, 43% of the respondents said that UiTM gave a medium level of consultancy to them and 29% agreed on the high level. UiTM also provided medium (32%) to high (36%) helps to theses SMEs in terms of human resource. Finally, high (34%) and very high (29%) trainings were conducted for these SMEs by UiTM.

Table 2
PANEL B: RESPONDENTS' DESCRIPTIVE RESULTS, N=209

Variable	Details	%	Frequency
Owntype	Sole proprietorship	78	129
	Partnership	9	15
	Sdn Bhd	13	21
Alumnistaff	No alumni staff	86	142
	Yes alumni staff	14	23

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Uitmbisinfl	No	6	10
	Yes	94	155
Uitmeffect	No effect	2	4
	Minimum effect	35	58
	Affected	38	62
	Severely affected	24	40
Marketing	Low	42	70
	Medium	15	24
	High	4	7
	Very high	39	64
Consultancy	Low	20	32
	Medium	43	71
	High	29	48
	Very high	9	14
HR	Low	13	21
	Medium	32	52
	High	36	59
	Very high	20	33
Trainings	Low	22	37
	Medium	15	24
	High	34	56
	Very high	29	48

Owntype is the different type of business ownership where 1 is sole proprietorship, 2 is partnership and 3 is private limited. Alumnistaff refers to any staff hired among UiTM alumni. Uitmbisinfl is how the business isinfluenced by the UiTM appearance within their business location. Uitmeffect is how UiTM affected the business growth. Marketing, consultancy, HR and trainings are the contributions provided by UiTM to these with different scale; 1 is low, 2 is medium, 3 is high and 4 is very high.

For Pearson Correlation, at 95% and 90% confidence levels, Pearson Correlation results show the relationship between pairs of variables. The results show that there are positive and significant results between SME's revenue with the percentage of revenue derived from UiTM and business age. In terms of UiTM contribution to these SMEs; marketing and trainings show positive and significant relationship to these SMEs' revenue. SMEs' staff number hired is also positively significant to marketing that UiTM provided. Business age is positive and significant to UiTM influential, marketing and trainings. Ownership type of these SMEs is negative and significant to the UiTM trainings which imply that the sole proprietors that carry out their business in close proximity with UiTM made efficient uses of the trainings that UiTM provided them. (Table 3).

Table 3
PEARSON CORRELATION RESULTS

	Revenue	**Perctincuitm**	**Staffno**	**Bisage**	**Owntype**	**Alumni staff**	**Uitmbisinfl**	**UiTM effect**	**Marketing**	**Consultancy**	**HR**
Perctincuitm	0.121*										
Staffno	0.123*	0.109									
Bisage	0.142**	0.107	0.112								
Owntype	0.112	-0.107	0.102	-0.102							
Alumnistaff	-0.106	0.104	0.107	0.103	0.113						
Uitmbisinfl	0.117	0.109	0.111	0.130*	0.104	0.107					
UiTMeffect	0.103	0.108	0.108	-0.106	0.103	-0.102	0.102				
Marketing	0.124*	0.107	0.119*	.129*	0.104	0.114	0.109	0.104			
Consultancy	0.112	0.104	0.105	-0.106	0.101	0.112	0.102	0.11	0.104		

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HR	0.104	0.101	0.113	0.109	0.111	0.104	0.103	-0.11	0.113	0.103	
Trainings	0.127*	0.119*	0.112	0.125*	0.124*	0.113	0.105	0.109	0.113	0.114	0.10
Note: ** significant at 95% and * significant at 90%											

From the Bivariate Pearson Correlation results, a regression analysis was then performed to further examine the effect of SMEs revenue with other exploratory UiTM-SMEs contribution variables (marketing, consultancy, HR, trainings) while controlling the effect of SMEs' ownership type, staff number and business age.

Table 4 depicts the results of the regression analysis. The results show that SMEs revenue is significant to the marketing and trainings that is provided by UiTM to them at 90% confidence level. The findings in this study parallel to Zakaria (2009) that both earnings and cash flow can be used to provide corporate liquidity performance in small and medium businesses in Malaysia. Hence with good revenue performance, marketing strategies could be enhanced as well as more trainings could also be provided. Additionally, business age also confirms the significance relationship to these SMEs revenue at 95% confidence level.

Thus, the results accepted the hypothesis of H1 that there is a significant association between SMEs revenue across UiTM contribution in terms of marketing and trainings provided. The results imply that the marketing that UiTM has offered and trainings provided to the surrounding SMEs have helped them to gain better revenues. Business age is significant to revenues as the more established the business the better revenue that they enjoyed. Variance inflation factor (VIF) results show no multicollinearity problem suspected in this research parameter.

$$\text{SMErev} = \beta_0 + \beta_1\text{marketing} + \beta_2\text{consultancy} + \beta_3\text{HR} + \beta_4\text{trainings} + \beta_6\text{owntype} + \beta_7\text{staffnumber} + \beta_8 bi\text{sage} + e \quad (1)$$

Table 4
MULTIPLE REGRESSION RESULTS AMONG THE INDEPENDENT AND CONTROL VARIABLES

	Coefficients	**T stat**	**VIF**
Revenue			1.105
Marketing	0.167	2.34*	1.118
Consultancy	0.029	0.411	1.167
HR	0.043	0.695	1.278
Training	0.158	2.13*	1.088
Owntype	0.024	0.334	1.182
Staffno	-0.057	-0.800	1.165
Bisage	0.209	2.85**	1.240
Note: ** significant at 95%; * significant at 90%			

Revenue is the gross income of the SMEs. Marketing, consultancy, HR and trainings are the contributions provided by UiTM to these SMEs with different scale; 1 is low, 2 is medium, 3 is high and 4 is very high. Owntype is the different type of business ownership where 1 is sole proprietorship, 2 is partnership and 3 is private limited. Staffno is the number of staff hired while Bisage is the age in number of years for the business since its establishment.

CONCLUSION

The purpose of this study is to examine the effect of UiTM contributions namely – marketing, consultancy, HR and trainings to SMEs revenue. The parameters of this study also control the effect of ownership type, staff number and business age among the SMEs.

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As the biggest university in Malaysia, the appearance of UiTM campuses across the country plays a vital role in contributing to the development and success of the surrounding SMEs, as the community in the institution is also the customer of these enterprises. Nonetheless, there is an alarming concern of the gap between university-community; hence, the process of transferring knowledge and expertise to the local community remains an unresolved issue. Therefore, this study was designed to gather information on the factors of SMEs revenue with the effect of UiTM contributions – marketing, consultancy, HR and trainings while controlling the effect of respondents' ownership type, staff number and business age.

The results of the study show that marketing and trainings provided by UiTM are significant to SMEs revenue while business age had also positively become the influential factor. These results shed highlight to the policymakers of the institutions to get a more in-depth understanding about communities' expectation and aid that university may offers while further promote the university-industry collaboration and initiatives.

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