

SMART UNIVERSITY IMAGE: BRANDING STRATEGY IN PRIVATE UNIVERSITIES

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ABSTRACT

This study aims to develop a new construct, Smart University Image (SUI), as a branding strategy in private universities. It is necessary due to the limitations of brand image theory in the context of a Smart University (SU), which is considered inconsistent and insufficient semantically or functionally. The research was analyzed by using Structural Equation Modeling (SEM). The respondents were 215 students from private universities, including in the SU category in West Java Province, one of the provinces with the highest number of private universities in Indonesia. The results showed that Technology Readiness (TR), E-Service Quality (ESQ), and E-Information Quality (EIQ) were significantly influenced by Value Co-Creation (VCC) and SUI at private universities in West Java. VCC is able to mediate the relationship between ESQ, EIQ, and SUI. It is concluded that SUI is an important value of branding strategy through VCC between students and the university.

Keywords: Smart University image; branding strategy; private university

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INTRODUCTION

The new paradigm views the relationship between universities and their students as equal to that of commercial companies and their consumers, so higher education institutions are currently practicing marketing (Susilawati et al.,

2021). Marketing activities that are increasingly prominent in the world of education, especially in private universities around the world, cannot be separated from the intense competition in universities to get new students, diversification of funding, the emergence of new providers of educational services, and changes in basic law in

higher education institutions (Han and Xu, 2019). Aligned with this, prior research conducted by Schulze et al. (2017) has clarified that higher education underwent a process of liberalization, bolstering its market presence through decentralized decision-making, emphasizing independence, and preparing to face competition, especially in light of the rising number of private universities.

A key university marketing strategy to navigate a challenging competitive environment is establishing a distinct brand image. A distinctive brand image can positively affect their reputation, substantially impacting the student's time at the university (Berry, 2002). A positive reputation sends encouraging signals to prospective students, resulting in a distinguishing characteristic of the university. A blend of a positive brand image and sound reputation will contribute to an increase in student satisfaction, which will subsequently result in positive word-of-mouth and brand loyalty. Consequently, the university would have developed a distinguishing factor contributing to its competitive advantage.

In connection with the competitive landscape, the Central Bureau of Statistics (2022) data suggests that there will be a continual rise in the number of private universities in Indonesia. There are 3,111 private universities spread throughout Indonesia. As many as 2,982 units, or 93.98%, are private universities; only 125 units of the total higher education institutions are state universities. Statistical data showed that for the last 4 years, most private universities are located in West Java Province, namely 401 units in 2019, 389 units in 2020, 392 units in 2021, and 388 units in 2022. This condition shows that competition between private universities, especially in West Java Province, is much tighter than in other provinces in Indonesia. In connection with this condition, Pham et al. (2019) said that to survive the intense competition, state universities need to develop branding and marketing strategies.

In response to competition in the digital era, many universities have used the SU tagline to create a positive image and maintain a competitive position in the higher education market (Musselin, 2018; Spry et al., 2018). Tikhomirov et al. (2015) describe SU as a concept, including the overall improvement of all educational procedures. Uskov et al. (2016)

define SU as a combination of information and communication technology and faculties that produce a new, better-quality level in educational processes and outcomes from a commercial, research, and other university operational perspective.

The criteria for SU in Indonesia have not been standardized (Zakir et al., 2019). Various terminologies such as Smart University, Smart Education, Digital University, Cyber University, Intelligent University, and similar topics are the main topics of various university brand image-based strategic plans, which are often difficult to distinguish from one another. However, as an effort towards SU standards, the Ministry of Education and Culture has assessed the adoption of digitalization in state and private universities in Indonesia through TeSCA Digital Adoption in learning and student activities as a form of commitment to support the progress of higher education and education in Indonesia.

Due to the absence of standardization regarding SU, brand image elements at the university become difficult to measure. The idea of a brand image is often unclear due to the lack of a widely accepted definition, ambiguity, and far from its original intent (Lee et al., 2014). The lack of theoretical consensus on the concept of brand image in SU makes it difficult to measure the concept. This is because the SU concept was only started a few years ago, so these principles and concepts have not been clarified (Uskov et al., 2017).

To attract and cultivate a positive university image from the students' perspective, the university employs the concept of Relationship Marketing (RM), which enables organizations to establish strong connections with their consumers (Saha et al., 2022; Schlesinger et al., 2015). This approach encourages the development of shared values between students and universities (Schlesinger et al., 2015; Payne et al., 2008). Additionally, students have shown keen interest in actively participating as partners in their higher education experiences (Bovill, 2020; Bovill and Felten, 2016; Harrington et al., 2014). Co-creating value allows institutions and students to collaborate, enriching the student experience and empowering students to contribute as partners. Value Co-Creation (VCC) entails integrating student and organizational resources, facilitating diverse activities and experiences that foster exchanges and

interactions, ultimately leading to improved practices and innovations (Pralhad and Ramaswamy, 2004).

In addition, the development of TR, ESQ, and EIQ in higher education institutes will make services more effective and attractive to assist universities (Ramaswamy, 2011; Indrayani and Pardiyono, 2020) in obtaining good feedback from their students and in turn creating good university image. TR, ESQ, and EIQ also need to be developed at private universities in West Java. According to data from the Association of Indonesian Internet Service Providers (APJII), it is reported that in 2021, West Java Province had the highest number of Internet users, accounting for 16 percent of the total Internet users in Java. Most internet users in Indonesia are aged 15 to 19 and are high school and college students who prefer to use the internet to meet their needs, including services and information.

Based on this background, the researchers proposed a new SUI construct as a branding

strategy in private universities. SUI can contain the idea of a brand image in an SU in terms of semantics and content so that the smart impression is attached to its branding strategy. This is increasingly important in the intense competition in the education market to uphold the right brand terminology, with the same standardization on smart and holistic university concepts, to formulate a good branding strategy for private universities.

METHODOLOGY

The research started from January 2023 to May 2023 using the cross-sectional method. Cross-sectional research is carried out in one shot or one snapshot (Muhyiddin et al., 2017). Based on the variables studied, this study is descriptive and verification research. The research model can be modeled from the research background in Figure 1.

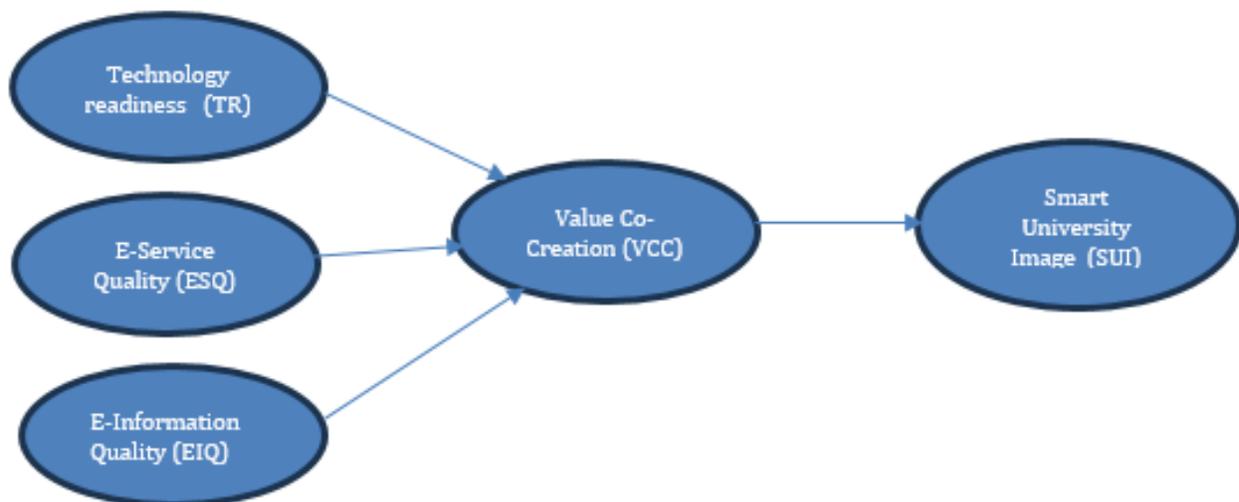


Figure 1: Research Model

This study used a population of students at private universities in West Java Province which included SU from the categories of large campus (Telkom University and Binus University), medium campus (Widyatama University and Maranatha University), and small campus (Garut Institute of Technology). Students selected as respondents were 215 second and third-grade students, with the assumption that these students had experienced learning at their university so they could assess and answer the

questionnaire properly and objectively. Hair et al. (2014) recommend a sample size of 200 to provide a solid basis for estimation.

The SEM used in this study requires basic assumptions to be met, including the sample size. Kelloway, E. K., and Santo, D. A., 1999 explained that the sample for the SEM model has a size with a maximum of five latent variables (constructs), and each latent variable described by three or more indicators is considered to be between 100 and 150 respondents. This research

consists of five latent variables with 24 dimensions, examining 215 respondents. According to the basic assumptions of the SEM, the respondents are considered adequate. In addition, a literature study is also carried out to collect theory or information related to research problems and variables. The literature review was regarding SUI and other variables in this study.

DISCUSSION

Measurement Model Testing

This study evaluates the measurement model using a one-level Confirmatory Factor Analysis (CFA) approach, specifically the first-order CFA. This approach's first level (first order) assesses the relationship between the indicators and the variables. The results of the CFA test are presented in Table 1.

Table 1: Measurement Model

Latent Variable	Indicator	λ	λ^2	e	VE	CR
Technology Readiness	TR1	0.930	0.865	0.130	0.709	0.906
	TR2	0.900	0.810	0.180		
	TR3	0.770	0.593	0.410		
	TR4	0.750	0.563	0.440		
E-Service Quality	ESQ1	0.720	0.518	0.480	0.669	0.934
	ESQ2	0.860	0.740	0.260		
	ESQ3	0.830	0.689	0.300		
	ESQ4	0.800	0.640	0.360		
	ESQ5	0.890	0.792	0.210		
	ESQ6	0.800	0.640	0.360		
	ESQ7	0.810	0.656	0.340		
E-Information Quality	EIQ1	0.900	0.810	0.200	0.765	0.958
	EIQ2	0.920	0.846	0.160		
	EIQ3	0.900	0.810	0.180		
	EIQ4	0.900	0.810	0.190		
	EIQ5	0.770	0.593	0.410		
	EIQ6	0.860	0.740	0.260		
	EIQ7	0.870	0.757	0.250		
Value Co-Creation	VCC1	0.840	0.706	0.290	0.760	0.950
	VCC2	0.910	0.828	0.180		
	VCC3	0.890	0.792	0.200		
	VCC4	0.870	0.757	0.240		
	VCC5	0.900	0.810	0.200		
	VCC6	0.820	0.672	0.330		
Smart University Image	SUI1	0.850	0.723	0.280	0.815	0.946
	SUI2	0.930	0.865	0.140		
	SUI3	0.920	0.846	0.150		
	SUI4	0.910	0.828	0.170		

Table 5 indicates that all standardized factor loading values (λ) ≥ 0.50 indicate good validity for all the indicators. The reliability of the

measurement model is demonstrated by $CR \geq 0.70$ and $VE \geq 0.50$, confirming its good reliability.

Structural Model Testing

This study will examine two structural models following the research model. The statistical tests on the measurements of the structural models reveal the values of the endogenous latent variables as follows:

$$VCC = 0.36*TR + 0.31*ESQ + 0.34*EIQ, \quad (1)$$

$$\text{Errorvar.} = 0.26, R^2 = 0.74$$

$$SUI = 0.81*VCC, \quad (2)$$

$$\text{Errorvar.} = 0.34, R^2 = 0.66$$

Remarks:

VCC = Value Co-Creation

SUI = Smart University Image

TR = Technology Readiness

ESQ = E-Service Quality

EIQ = E-Information Quality

Before assessing the structural model, the fit was evaluated using the goodness of fit index approach. This was conducted to determine whether the theoretical model aligns with the empirical data gathered through a questionnaire administered in the field. The outcomes of the test are displayed in Table 2.

Table 2: Model Fitment Test Results

GOF	Acceptable Match Level	Model Index	Explanation
Chi-square	chi-square $\leq 2df$ (good fit), $2df < \text{chi-square} \leq 3df$ (marginal fit)	718.63 < 2df (686.0)	Good Fit
P-value	$P \geq 0.05$	0.01	Bad Fit
GFI	$GFI \geq 0.9$ (good fit), $0.8 \leq GFI \leq 0.9$ (marginal fit)	0.44	Marginal Fit
RMR	$RMR \leq 0.5$	0.12	Good Fit
RMSEA	$0.05 < RMSEA \leq 0.08$ (good fit), $0.08 < RMSEA \leq 1$ (marginal fit)	0.07	Good Fit
NNFI	$NNFI \geq 0.9$ (good fit), $0.8 \leq NNFI \leq 0.9$ (marginal fit)	0.98	Good Fit
NFI	$NFI \geq 0.9$ (good fit), $0.8 \leq NFI \leq 0.9$ (marginal fit)	0.99	Good Fit
AGFI	$AGFI \geq 0.9$ (good fit), $0.8 \leq AGFI \leq 0.9$ (marginal fit)	0.81	Marginal Fit
RFI	$RFI \geq 0.9$ (good fit), $0.8 \leq RFI \leq 0.9$ (marginal fit)	0.97	Good Fit
CFI	$CFI \geq 0.9$ (good fit), $0.8 \leq CFI \leq 0.9$ (marginal fit)	0.98	Good Fit

Based on Table 2, one out of the ten fit indicators falls under the “poor fit” category, while the rest have either “marginal” or “excellent” fit categories, with some not fitting any category. The study proceeds with the research model to validate the research hypothesis, utilizing the re-specified version. The

initial model exhibited numerous indicators with a “bad fit” category in the Goodness of Fit (GOF) results. Subsequently, the research hypothesis was tested, and the outcomes are presented in Figures 2 and 3.

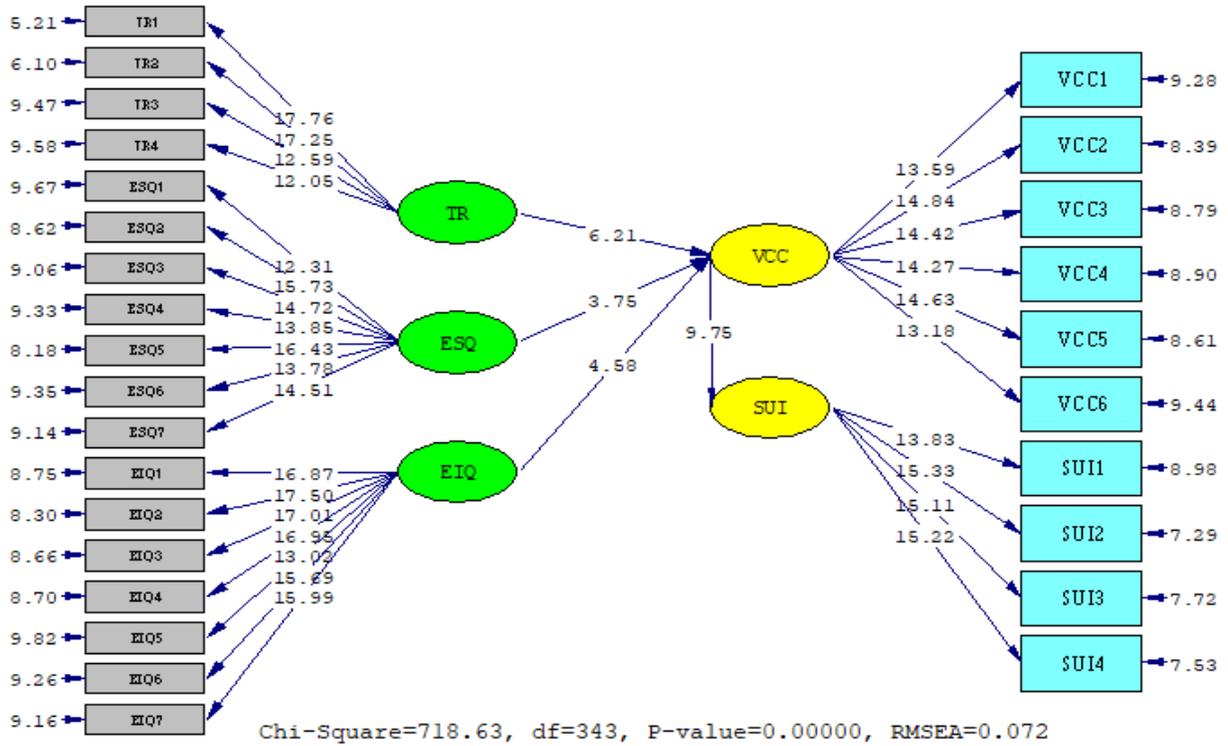


Figure 2: T-Value Research Structural Model Diagram

Analyzing the path coefficient values enables assessing the influence level between the resulting latent variables. The path coefficient

values obtained from this investigation are presented in Figure 3.

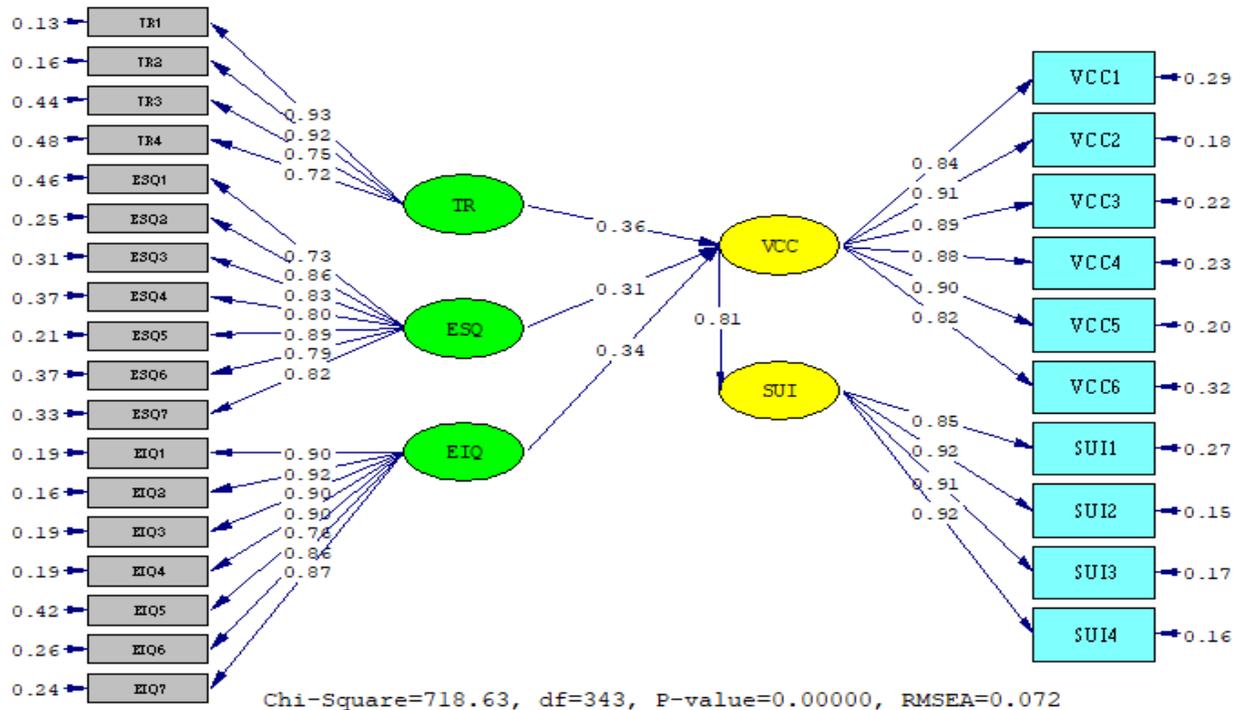


Figure 3: Statistical Hypothesis Testing

The following is the recapitulation of hypothesis testing based on Lisrel version 8.72 calculations (see Table 3).

Table 3: Hypothesis Testing Results

Hypothesis	Variable	Path Coefficient	t count > 1.96	F count	Conclusion
H1	TR --> VCC	0.36	6.21		Accepted
H2	ESQ --> VCC	0.31	3.75		Accepted
H3	EIQ --> VCC	0.34	4.58		Accepted
H4	TR, ESQ dan EIQ --> VCC			200.18 > 2.65	Accepted
H5	VCC -> SUI	0.81	9.75		Accepted
Mediation hypothesis					
H6	TR --> VCC --> SUI		5.238		Accepted
H7	ESQ --> VCC --> SUI		3.500		Accepted
H8	EIQ --> VCC --> SUI		4.145		Accepted

The t-count value for the TR variable is 6.21, exceeding the t-critical value of 1.96, as indicated in Table 3. Given that the t-count value surpasses the t-critical value with a 5% margin of error, hypothesis H1 is accepted, and hypothesis H0 is rejected. Thus, TR significantly and positively impacts VCC. The direction of the relationship between TR and VCC is positive, meaning that an increase in TR leads to a corresponding increase in VCC and vice versa.

This aligns with prior research conducted by Payne et al. (2008) and Rialti et al. (2022), highlighting that technology facilitates collaboration and VCC. Furthermore, the increasing value of information technology is being actualized through the collective efforts of various parties involved in the VCC process (Kohli and Grover, 2008). Huang and Rust (2018) explain that companies that want to take advantage of digitalization readiness in services must find ways to jointly create value with customers VCC through market efficiency and data integration, in line with this research. Parasuraman & Colby, (2015) explain that digital transformation and TR revolutionize service ecosystems and trigger consumer feedback.

The t-value for the ESQ variable is 3.75, which surpasses the critical t-value of 1.96. This result leads to the acceptance of the alternative hypothesis (H2) and the rejection of the null hypothesis (H0) at a significance level of 5%. Therefore, ESQ has a positive and statistically significant impact on VCC. The relationship between ESQ and VCC is positively oriented,

indicating that an enhancement in ESQ corresponds to an increase in VCC and vice versa.

This study's findings align with Parasuraman et al.'s (2005) research, which revealed a significant relationship between ESQ and VCC. The study's results elaborate on ESQ, defining it as the extent to which websites facilitate efficient and effective shopping, purchasing, and delivery, thereby creating value for customers. Rowley (2006) further emphasizes that "e-service" refers to acts, efforts, or performances delivered through information technology, encompassing the Web, information kiosks, and mobile devices. Essentially, ESQ is centered on value creation through web services.

The Service-Dominant Logic (SDL) theory, proposed by Vargo and Lusch (2004), contends that companies go beyond merely selling physical products; they also offer solutions and benefits to customers, which ESQs lead to shared value creation. Additional research by Vargo and Lusch (2008) clarifies that the benefits of ESQ are meaningful to customers only when they can derive value from the company. Consequently, the customer and the company are viewed as "endogenous in itself" value creators.

The EIQ variable exhibits a t-count value of 4.58, surpassing the t-critical value of 1.96. Consequently, hypothesis H3 is accepted, and hypothesis H0 is rejected at a 5% significance level. It can be inferred that EIQ positively and substantially impacts VCC. The relationship between EIQ and VCC is positive, signifying that an

increase in EIQ corresponds to an increase in VCC and vice versa.

The research conducted by Rita et al. (2019) corroborates the findings of this study. The research highlights that co-creation has become a competitive necessity. Consumers value the quality and quantity of information and the ability to access information freely, contributing to a satisfying consumer experience. Prahalad and Ramaswamy, (2000) explain that access to information empowers consumers to make more informed decisions, enabling companies across various industries to gain control over value creation and explore innovative business approaches. The quality of information and communication technologies, especially the internet, is prompting companies to rethink value creation and become more responsive to consumer experiences (Prahalad and Ramaswamy, 2002).

The F-count value for the variables Technology Readiness, E-Service Quality, and EIQ on VCC is 200.18, surpassing the F-table value of 2.56. Consequently, at a 5% error level, hypothesis H4 is accepted, and hypothesis H0 is rejected. It can be concluded that Technology Readiness, ESQ, and EIQ collectively positively and significantly impact VCC. Likewise, the t-count value for the VCC variable is 9.75, exceeding the t-critical value of 1.96. Thus, at a 5% error level, hypothesis H5 is accepted, and hypothesis H0 is rejected. This leads to the conclusion that VCC positively and significantly affects SUI. The relationship between VCC and SUI is positive, indicating that an increase in VCC results in a corresponding rise in SUI and vice versa.

Previous studies supporting this research include the work of Simoes and Soares (2010), which highlights that the internet has significantly transformed how both domestic and international students acquire knowledge, information, and experiences related to the current university image. The internet shapes Value VCC and the university image. Elsharnouby (2015) further explains that involving students in co-creating their university education allows for adapting educational services to meet students' needs and preferences. Therefore, student co-creation can be vital in providing a distinctive and fulfilling higher education experience, ultimately contributing to building a positive university image. Oh et al. (2015) reinforced this notion by stating that engaging in shared value behavior can

significantly contribute to individual students and the university's overall image.

Based on the results of the Sobel test, which calculated the mediation hypothesis for the relationship between TR and SUI through VCC, the t-value obtained was 5.238. Considering a significance level (α) of 0.05, the critical t-table value is 1.96. As the calculated t-value (5.238) is greater than the t-table value (1.96), it can be concluded that VCC effectively mediates the relationship between TR and SUI, confirming hypothesis 6. Similarly, for hypotheses 7 and 8, the results of the Sobel test show t-values greater than 1.96, leading to the acceptance of these hypotheses. In other words, VCC effectively mediates the relationships between ESQ, SUI, and EIQ and SUI.

The findings of this study support the acceptance of hypothesis 15, indicating that VCC can effectively mediate the relationship between TR and SUI. These results align with the Service-Dominant Logic theory proposed by Vargo and Lusch (2008), emphasizing the importance of interaction with service providers and active participation in co-creation (Prebensen et al., 2013). The VCC process starts with consumer interaction with experience elements such as physical environment dimensions, including office equipment and technology infrastructure, and interpersonal dimensions, for example, interactions with lecturers or instructors (Pizam and Tasci, 2019). These two dimensions, namely the availability of technological infrastructure and good interaction with instructors, from TR. Creating shared value that is good and in the right "portion" will form a good image for an organization. In this case, a good TR will affect good SUI by creating shared value VCC in the right portion.

The findings of this study support the acceptance of hypothesis 16, indicating that VCC effectively mediates the relationship between ESQ and SUI. These results are consistent with previous research by Tariq, Z. et al. (2022), which also highlighted the mediating role of VCC in shaping university images. The active participation and collaboration of students with institutions through continuous interactive activities enhance the university's brand image (Hatch and Schultz, 2010). VCC is viewed as an open innovation approach that involves customers in the co-creation process, particularly in the service industry (Kumar & Kandoi, 2018).

The study's findings indicate that VCC plays a mediating role between EIQ and SUI. These results are supported by the Theory of Reasoned Action (TRA) proposed by Fishbein and Ajzen (1975). TRA offers insights into understanding and predicting human behavior, suggesting that individuals make decisions based on their awareness of the consequences of their actions and the available information. In the digital era, this theory motivates EIQ to enhance consumer feedback, improve a company's image, and increase consumer satisfaction (Rao et al., 2021). Additionally, the importance of innovation in management decisions is highlighted (Pavlenchuk et al., 2023). In the context of a smart university, technological innovation becomes essential to enable better decision-making for university management, leading to improved student feedback and creating a positive SUI.

CONCLUSION AND RECOMMENDATION

TR, ESQ, and EIQ positively and significantly affect VCC in private universities in West Java, which are SU. This study demonstrates that higher TR, ESQ, and EIQ levels improve shared value creation between private universities and students. Value Co-Creation effectively mediates the relationships between ESQ, EIQ, and SUI. The findings have practical implications for private universities aiming to develop an SUI by identifying areas for improvement and implementing effective branding strategies. Additionally, other researchers can utilize the study's results as a valuable reference in furthering their understanding of marketing concepts, specifically in TR, ESQ, EIQ, VCC, and SUI.

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