# The Influence of Service Innovation, University Reputation on Student Satisfaction: Academic Culture as a Mediator at Universitas Khairun

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## ARTICLE INFORMATION

## ABSTRACT

Education is one of the driving forces for progress in the global community, one of which is through the emergence of innovations. With innovations in various fields of science and knowledge, changes have emerged that can positively impact people's lives. Higher Education, as one of the places of development of science, is a very appropriate place to develop innovations, both in the technological and social fields. On the other hand, changes in people's mindsets and behaviors demand changes in higher education institutions. The rapid development of science, supported by technological advances, demands changes in education and teaching patterns, including in higher education. With information disclosure and existing social and technological changes, science can develop further and more rapidly if the education system can adjust to the changes.

This study used a survey method with the distribution of questionnaires. The population of the study was students of Khairun University. Sample takers with non-probability sampling method, by convenience sampling. The analysis method used in this study used Smart PLSVersion 3.0

The results showed that out of 10 hypotheses, five hypotheses were accepted, and five hypotheses were rejected.

**Keywords**: **Service Innovation, University Reputation, Academic Culture, University Student Satisfaction**

## INTRODUCTION

Covid-19 cases in Indonesia were first confirmed in early March 2020. Since then, this pandemic has quickly spread to all regions in Indonesia. COVID-19 is an infectious disease caused by a coronavirus first discovered in Wuhan, China, in December 2019 (WHO). The virus is now a pandemic that is happening in many countries around the world. The spread of COVID-19 has a huge impact on economic activities, the transportation sector, and the world of Education. To prevent the spread of COVID-19, the World Health Organization (WHO) recommends stopping activities that will potentially cause crowds. Therefore, the Indonesian government issued a social distancing policy, which was then issued a Circular Letter of the Ministry of Education and Culture, Directorate of Higher Education No. 1 of 2020, concerning the prevention of the spread of COVID-19 in the world of Education. In this circular letter, the Ministry of Education and Culture instructed to organize distance learning and study from home (SFH). This policy became known as online/online learning.

Online learning began in March 2020. The change in learning media from conventional to online shocks academic culture for academics and students, due to network systems that demand the availability of supporting learning facilities. This process requires students to independently follow information updates on the platform where courses will be taught online, giving assignments/quizzes, and providing material. Learning techniques fully adapt to the policies of the lecturers of each course. Platforms that can be used include Google Classroom, video conferencing, telephone or live chat, zoom, Webex, google meet, and WhatsApp groups. Khairun University students take advantage of virtual class applications, Zoom meetings, Google Classroom, and Whatsapp Groups. This online learning is one of the innovations in the field of Education to answer the challenges of technological literacy and the availability of more varied learning resources. Online learning uses materials and periods that follow the curriculum and flexibility of learning time. One can learn anywhere and anytime. In addition, they are implementing health protocols on campus so that online learning is a fairly good alternative during a pandemic. Online learning benefits lecturers and students (Singh & Worton, 2005). For students, online learning is one of the alternative learning methods that does not require them to be present in class. In addition, this learning will form a spirit of learning independence and encourage interaction between students, especially for students who are usually not actively speaking; they will be able to more freely express their opinions/questions via writing if online learning is carried out as it is today. As for lecturers, online learning methods are here to change conventional teaching styles to improve work professionalism later. The online learning model also provides opportunities for lecturers to assess and evaluate each student's learning progress more efficiently because they can interact directly and have a track record.

The success of learning media is not only viewed from one technical side but also depends on the characteristics of each student. Nakayama M (2007) reveals that all the literature in e-learning indicates that not all learners will succeed in online learning. This condition is due to the factors of the learning environment and the characteristics of each student. Online learning at each university applies different forms and technicalities. For the output, many students feel they do not understand the material, have more independent assignments, and have difficulty doing practicum as a support for the course. Due to limited tools and experimental samples, practicums that are carried out online sometimes cannot be practiced in their respective

homes. Lecturers are also more difficult to supervise students during online learning because it is limited to the media, so there may be students who overslept when the lecturer delivered the material or who only looked at it but were not listened to. In addition, another problem of online learning is that there are still limited internet signals in some areas, which hinders the learning process.

Higher Education is a formal educational institution that carries out the mandate to create an academic society that is quite knowledgeable and becomes an agent of social change. Universities develop an academic culture based on the Tri Dharma of Higher Education, namely, Education, research, and community service. These values ultimately distinguish the academic community on campus from the academic community in secondary Education and the levels below it. The specificity of higher education, compared to the previous level of educational units, includes many aspects, including social, learning, competency, and personality. These aspects inspired the realization of an academic society with more mature scientific reasoning born in higher Education. The success of the college in achieving its vision and mission is determined by student satisfaction with the services provided by the college. This is because students, in addition to acting as input, are also customers (consumers) who take advantage of college services. Therefore, in the concept of service, student satisfaction is important. Ten research questions were proposed to be tested—1) Does service innovation affect university reputation? 2) Does service innovation affect academic culture? 3) Does university reputation affect academic culture? 4) Does university reputation affect university student satisfaction? 5) Does service innovation affect university student satisfaction? 6) Does academic culture affect university student satisfaction? 7) Can reputation university mediate the relationship of service innovation to academic culture? 8) Can academic culture mediate the relationship between service innovation and university student satisfaction? 9) Can academic culture mediate the relationship between university reputation and university student satisfaction? And 10) Whether university reputation can mediate relationship service innovation to university student satisfaction

## LITERATURE REVIEW

### Service Innovation
By serving customers well, universities can create student satisfaction. Durst et al. (2015) stated that service innovation is an innovation carried out in various service sector scenarios that include developing completely new services or gradually improving existing ones. At the same time, Ostrom et al. (2010) in Muhammad & Muhammad (2018) present an all-encompassing approach to determining service innovation. This tendency means that service innovation creates value for consumers, human resources, owners, allies, and society through new and improved service products, processes, and business models. Furthermore, Forfas (2006) in Muhammad & Muhammad (2018) proposed a multi-dimensional framework for service innovation consisting of three dimensions: service product innovation, service process innovation, and service business model innovation.

### Reputation
Creed and Miles (1996) found that reputation is part of a guide or guideline related to positive expectations, where the development of reciprocity or exchange between the two. Customers will perceive that a brand has a good reputation. If a brand can meet its expectations, then a good brand reputation will strengthen customer trust (Lau and Lee, 1999). A significant effort

to solidify the company's reputation is to improve the organization's positive image (Charles J, Formburn, 1996). At the same time, Paul A. Argenti and Bob Druckenmiller (2004) define a company's reputation as a combination of various images representing a company.

### Organization Culture

Gareth Jones (2010; 2012) that organizational culture, among others, comes from; 1) Human characteristics in the organization, namely from the personal values and beliefs of the founders and leaders, which shape their character, and become the main source of organizational culture. 2) The ethics prevailing in the organization, that is, the ethics of the founders, leaders, and organization members, will become a common culture. Balzac (2011) explains that culture includes Education as a tool in transmitting culture, whether in a social environment or institution. While Xi Shen (2012:61) points out that academic culture in college refers to the external manifestation of the campus citizens' shared values, spirit, and behavioral norms. This kind of culture can be embodied in rules and policies, discipline, academic ethics, spirit, and cultural development.

### Customer Satisfaction

Customer Satisfaction is customer satisfaction with the products or services they get from us as producers. Kotler and Keller (2009) define customer satisfaction as the expression of a person's feeling of pleasure or disappointment that arises after comparing the expected performance with the reality obtained. This nature also occurs at higher education institutions—universities and colleges. For example, students are perceived as customers who have paid tuition and other related fees as a service price and receive the experience of teaching and learning at the institution.

### Service Innovation on University's Reputation

It has been argued that innovations can build an organization's reputation. This statement is stronger when the organization is a service one, particularly those in the education sector. This section is arguably expected to achieve, maintain, and exceed their customer expectation on innovation and service innovation. This circumstance is highly expected for higher education institutions, such as universities and colleges. Studies have shown that service innovation leads to an organization's reputation in the public eyes (Feng et. at, 2020; Manohar & Marwah, 2019). These previous studies lead to the <u>first hypothesis that service innovation affects academic culture</u>.
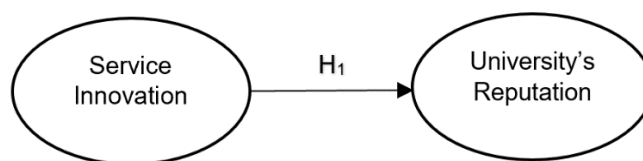


### Service Innovation to Academic Culture

In service innovation, it is possible that one type can result in innovation in another type, meaning that one type cannot be separated from another type. In essence, service innovation implementation must be oriented toward changes in universities, such as behavior changes. Furthermore, universities have undergone changes due to the necessity to implement health protocols, social distancing, and physical distancing in the new normal era, so the education industry has changed the online learning process and academic services.

Campus culture in a university is characterized by individuality, academic characteristics, openness, excellence, diversity, and creativity. As regulated in Law number 12 of 2012,

academic culture is "the entire system of values, ideas, norms, actions, and works sourced from Science and Technology in accordance with the principles of Higher Education. The development of academic culture is carried out by social interaction without differentiating ethnicity, religion, race, groups, genders, social position, level of financial ability, and political flow. Social interaction is carried out in learning, the search for scientific truth, mastery and/or development of Science and Technology, and the development of Higher Education as a scientific institution. Therefore, the Academic Community must maintain and develop an academic culture".

These two concepts then draw a line that shows the relationship between service innovation and academic culture. Recent studies still demonstrate this tendency (Abdi et.al, 2018; Feng & Ma, 2020). These studies result in producing the second hypothesis that service innovation affects academic culture
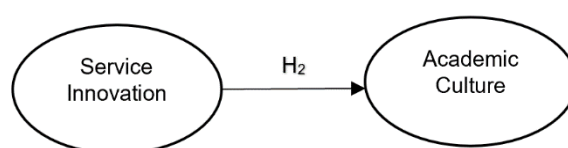


## University's Reputation in Academic Culture
Brand reputation can be interpreted as a measurement from others that the brand is good and strong. Brand reputation can be developed through advertising and public relations. However, brand reputation can also be influenced by product quality and performance. An enterprise's reputation is captured by the public (society) directly or indirectly based on experience and information received. A significant effort to solidify the company's reputation is to improve the organization's positive image (Charles J, Formburn, 1996).

Moreover, a brief elaboration on organizational culture provides a perspective on how it was influenced. This influence could also be led by its high expectation due to its name and brand. In other words, an organization's reputation can significantly affect how it develops its organizational culture. Studies have shown that an organization's reputation influences its culture (Meng & Berger, 2019, Setiawan et al., 2020). Based on this premise, the third hypothesis is built on where a university's reputation affects academic culture.
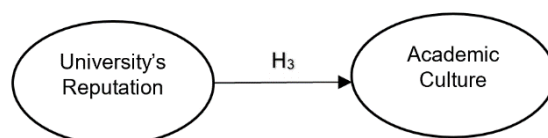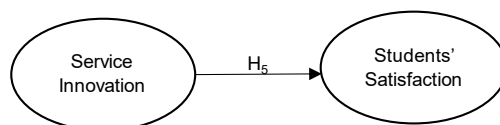


## Unversity's Reputation on Student Satisfaction
Next, a university as an organization is always evaluated to maintain its reputation. It has been the main purpose for a student to apply for admission to a high-rank university due to its long-run reputation. Several recent studies have found the influence of an organization's reputation on customer satisfaction (Islam et al., 2021; Wu et al., 2016). At this point, there is an indication that due to the reputation of that specific university or college, students tend to be satisfied with the university due to its reputation in delivering services. This argument leads to the fourth hypothesis that university reputation affects university students' satisfaction.
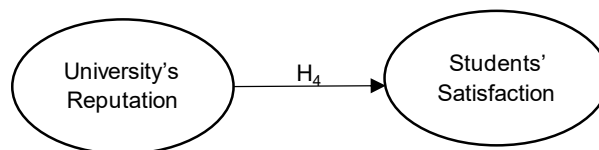
## Service Innovation on Students' Satisfaction

Customer satisfaction is very influential in the competition of a college. Studies show that innovation can influence satisfaction (Wikhamn, 2019; Wipulanusat et al., 2018). In the context of higher education, institutions need innovation so that the students are satisfied with college. This tendency leads to the fifth hypothesis that service innovation affects university students' satisfaction.



## Academic Culture on Student Satisfaction

When students have become part of the university, they live and experience the university's culture because it is a 'melting pot of many characteristics of individuals in receiving service through the teaching and learning processes. In Indonesia, Academic culture, as regulated in Law number 12 of 2012, is "the entire system of values, ideas, norms, actions, and works sourced from Science and Technology in accordance with the principles of Higher Education. This nature could lead to the argument that culture leads to an organization's members' satisfaction. Furthermore, studies have indicated that an organization's culture affects its members' satisfaction (Dirisu et al., 2018; Soomro & Shah, 2019; Paais & Pattiruhu, 2020). These studies suggest the sixth hypothesis that academic culture leads to university students' satisfaction.
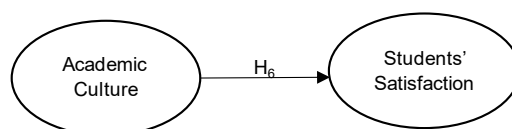


Based on previous research studies and hypotheses development ($H_1$ until $H_6$) above, other hypotheses could then be developed as follow:
- Hypothesis 7: There is an influence of service innovation on academic culture with the university's reputation as a mediation variable.
- Hypothesis 8: There is an influence of service innovation on university student satisfaction with academic culture as a mediation variable
- Hypothesis 9: There is an influence of university reputation on university student satisfaction with academic culture as a mediation variable.
- Hypothesis 10: There is an effect of service innovation on university student satisfaction with university reputation as a mediation variable

**Figure 2. Research Framework**
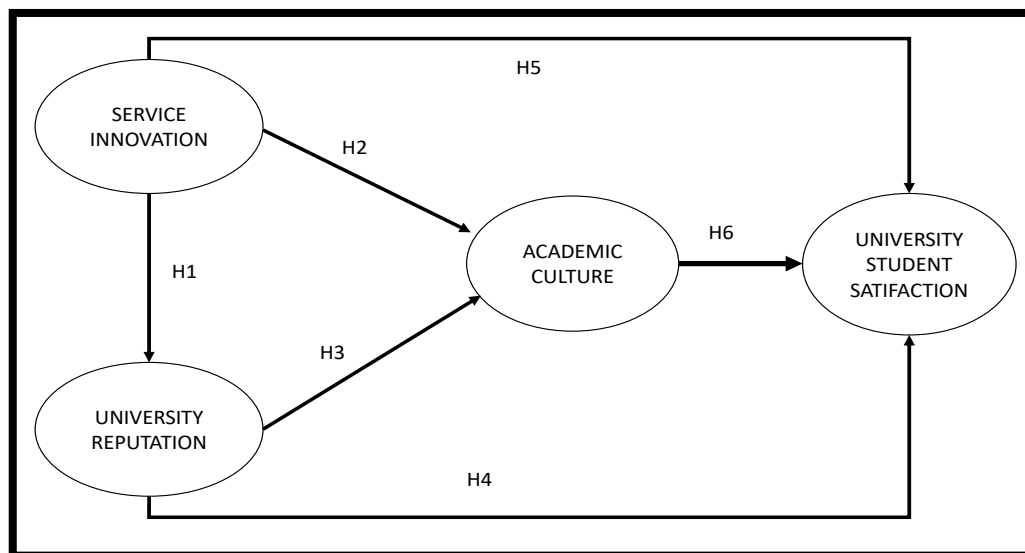


Source: Previous studies

## RESEARCH METHODS

This study uses quantitative methods using the survey method through the distribution of questionnaires, the sampling method with the purposive sampling method with female sex sample criteria and has been running a business for at least six months. The analysis method used is Smart Pls Version 16.

## RESULTS AND DISCUSSIONS

### *Universitas Khairun*
The competition for universities is getting tighter in North Maluku; the creative efforts can see this in providing Education to explore the uniqueness and excellence of universities that will attract customers of educational services by providing the critical faculties and consonance that are in demand by prospective students. For marketers, the education sector must provide an interesting experience in the learning process and the atmosphere provided to increase student satisfaction, which impacts positive word-of-mouth communication. The shift in the marketing paradigm is caused by customers increasingly demanding more from manufacturers and the higher intensity of competition. Relational marketing is a strategy that establishes long-term relationships with consumers based on loyalty formed through meeting consumer needs.

Universitas University (UNKHAIR), a leading State University (PTN) in North Maluku Province, has the responsibility to participate and participate in educating the nation's life as mandated in the Constitution of the Republic of Indonesia. From its establishment in 1964 until now, the institution entered its 55th year on August 15, 2020. However, as a state university, UNKHAIR has only entered its 15th year since the status transfer, based on the Presidential Decree of the Republic of Indonesia Number 18 of 2004, dated March 17, 2004. As time went by, UNKHAIR continued to improve itself in a better direction until the leadership of the previous

period also departed with the same intention of "Making UNKHAIR a big house for the development of Science." Therefore, UNKHAIR, as one of the universities in carrying out the vision and mission, is faced with three main issues, namely organization, personnel, and management in realizing its function of developing abilities, intelligent dispositions that are innovative, responsive, and creative through the tri dharma in the frame of science and technology for humanity.

**Table 1**
**Recapitulation of Student Registration Data**
**Academic Bureau of Student Affairs and Planning (BAKP)**
**Reporting the Year 2020/2021 Odd**

| NO | FACULTY | STUDY PROGRAM | 2016 | 2017 | 2018 | 2019 | 2020 | TOTAL |
|---|---|---|---|---|---|---|---|---|
| 1. | LAW | Legal Studies | 131 | 206 | 206 | 216 | 254 | 1125 |
| 2. | ECONOMICS AND BUSINESS | Economy of Development | 90 | 86 | 86 | 123 | 105 | 531 |
|  |  | Management Economics | 80 | 195 | 195 | 200 | 55 | 769 |
|  |  | Accountancy | 73 | 119 | 119 | 143 | 139 | 699 |
| 3. | TEACHER TRAINING & EDUCATION | Indonesian Education | 62 | 64 | 64 | 53 | 63 | 346 |
|  |  | English Language Education | 49 | 79 | 79 | 67 | 72 | 408 |
|  |  | PPKN | 58 | 44 | 44 | 53 | 37 | 306 |
|  |  | Mathematics Education | 50 | 52 | 52 | 73 | 60 | 341 |
|  |  | Physics Education | 44 | 55 | 55 | 57 | 34 | 313 |
|  |  | Biology Education | 52 | 56 | 56 | 55 | 64 | 354 |
|  |  | Geography Education | 28 | 42 | 42 | 49 | 55 | 319 |
|  |  | Chemistry Education | 43 | 54 | 54 | 65 | 35 | 340 |
|  |  | PGSD S1 | 51 | 81 | 81 | 146 | 248 | 645 |
|  |  | PG ECCE | 44 | 76 | 76 | 109 | 146 | 447 |
| 4. | AGRICULTURE | Agricultural Technology | 26 | 28 | 28 | 25 | 39 | 184 |
|  |  | Farm | 10 | 7 | 7 | 17 | 16 | 80 |
|  |  | Soil Science | 64 | 38 | 38 | 33 | 42 | 216 |
|  |  | Agrotechnology | 27 | 19 | 19 | 27 | 40 | 159 |
|  |  | Forestry | 48 | 54 | 54 | 71 | 103 | 399 |
|  |  | Agribusiness | 38 | 40 | 40 | 48 | 44 | 211 |
| 5. | FISHERIES & MARINE SCIENCES | Aquatic Resources Management | 39 | 40 | 57 | 39 | 47 | 260 |
|  |  | Aquatic Cultivation | 27 | 28 | 19 | 23 | 45 | 165 |
|  |  | Marine Science | 53 | 47 | 63 | 51 | 64 | 320 |
|  |  | Utilization of Sumempowered waters | 21 | 10 | 23 | 26 | 29 | 123 |
| 6. | HUMANITIES | Indonesian Literature | 9 | 15 | 18 | 26 | 27 | 98 |
|  |  | English literature | 29 | 67 | 80 | 93 | 103 | 407 |
|  |  | Historical Sciences | 10 | 13 | 24 | 23 | 35 | 120 |
|  |  | Social Anthropology | 35 | 30 | 39 | 30 | 19 | 206 |
|  |  | U. P. W | 3 | 11 | 20 | 17 | 22 | 73 |

| 7. | | Civil | 68 | 115 | 103 | 157 | 114 | 674 |
|---|---|---|---|---|---|---|---|---|
| | | Machine | 37 | 28 | 48 | 41 | 57 | 258 |
| | ENGINEERING | Electro | 58 | 49 | 77 | 67 | 61 | 353 |
| | | Architect | 60 | 56 | 68 | 88 | 80 | 407 |
| | | Informatics | 28 | 34 | 31 | 65 | 37 | 273 |
| | | Mining | 33 | 51 | 43 | 54 | 59 | 240 |
| 8 | MEDICINE | Doctor Education | 21 | 50 | 46 | 48 | 50 | 215 |
| | | Pharmacy | 0 | 0 | 0 | 0 | 57 | 57 |
| GRAND TOTAL | | | 1599 | 2039 | 2192 | 2478 | 2557 | 12441 |

Source: BAKP Unkhair (2021)

### Discriminant Validity

Discriminant validity can be judged based on the cross-loading value of each indicator against each latent variable. If the correlation between the construct and the measurement item is greater than the correlation with other latent variables, then the latent construct predicts the latent variable better than other latent variables. The cross-loading value from the analysis results can be seen in the table below.

**Table 1 Validity of Discriminate at The Indicator Level (Cross Loading)**

| | Academic Culture | Service Innovation | University Reputation | University Student Satisfaction |
|---|---|---|---|---|
| **AC1** | 0.631 | | | |
| **AC10** | 0.684 | | | |
| **AC11** | 0.727 | | | |
| **AC12** | 0.627 | | | |
| **AC2** | 0.766 | | | |
| **AC3** | 0.785 | | | |
| **AC4** | 0.747 | | | |
| **AC5** | 0.786 | | | |
| **AC6** | 0.773 | | | |
| **AC7** | 0.680 | | | |
| **AC8** | 0.754 | | | |
| **AC9** | 0.705 | | | |
| **SI1** | | 0.631 | | |
| **SI10** | | 0.828 | | |
| **SI11** | | 0.803 | | |
| **SI12** | | 0.831 | | |
| **SI13** | | 0.853 | | |
| **SI14** | | 0.825 | | |
| **SI16** | | 0.825 | | |
| **SI17** | | 0.805 | | |
| **SI18** | | 0.780 | | |
| **SI19** | | 0.782 | | |
| **SI2** | | 0.777 | | |
| **SI3** | | 0.782 | | |

| | Academic Culture | Service Innovation | University Reputation | University Student Satisfaction |
|---|---|---|---|---|
| SI5 | | 0.740 | | |
| UR1 | | | 0.681 | |
| UR10 | | | 0.629 | |
| UR11 | | | 0.765 | |
| UR12 | | | 0.752 | |
| UR13 | | | 0.743 | |
| UR14 | | | 0.614 | |
| UR2 | | | 0.732 | |
| UR3 | | | 0.699 | |
| UR4 | | | 0.826 | |
| UR5 | | | 0.798 | |
| UR6 | | | 0.822 | |
| UR7 | | | 0.779 | |
| UR8 | | | 0.788 | |
| UR9 | | | 0.771 | |
| USS1 | | | | 0.626 |
| USS2 | | | | 0.745 |
| USS3 | | | | 0.750 |
| | Academic Culture | Service Innovation | University Reputation | University Student Satisfaction |
| USS4 | | | | 0.721 |
| USS5 | | | | 0.761 |
| USS6 | | | | 0.806 |
| USS8 | | | | 0.758 |

Source: Primary data processed (2021)

Based on table 4. 5. 2 above, it can be seen that the correlation of each indicator with its construct is greater than that of the other constructs. This indication means that a latent construct predicts indicators on its columns better than indicators in other columns.

**Table 2 Discriminant Validity Table**
**at the Changer Level (Fornell Larcker Criterion)**

| | Academic Culture | Service Innovation | University Reputation | University Student Satisfaction |
|---|---|---|---|---|
| Academic Culture | 0.724 | | | |
| Service Innovation | 0.620 | 0.791 | | |
| University Reputation | 0.667 | 0.738 | 0.746 | |
| University Student Satisfaction | 0.364 | 0.416 | 0.398 | 0.740 |

Source: Primary data processed (2021)

The correlation of the AVE root with each variable is greater than its correlation with other variables, indicating good discriminant validity.

*Composite Reliability* and *Cronbach's Alpha*
*Composite reliability* and *Cronbach's alpha* are intended to look at the reliability or degree of consistency and stability of data or findings. The composite reliability value must be greater than 0.70 to be a reliable indicator. Another assessment can be used to look at the value of Cronbach's alpha. An indicator will be said to be reliable if the value of *Cronbach's alpha* is greater than 0.60. The value *of Composite reliability* and *Cronbach's alpha* can be seen in the table below.

**Table 3 *Composite Reliability* Values and *Cronbach's Alpha***

|  | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|
| **Academic Culture** | 0.917 | 0.929 | 0.524 |
| **Service Innovation** | 0.950 | 0.956 | 0.626 |
| **University Reputation** | 0.938 | 0.946 | 0.556 |
| **University Student Satisfaction** | 0.865 | 0.894 | 0.547 |

Source: Primary data processed (2021)

Cronbach's alpha and composite reliability value greater than 0.70 and AVE greater than 0.50 indicate good reliability and validity.

**Structural Model Evaluation (*inner model*)**
To evaluate the structural model in this study by looking at *the value of R Square* for dependent constructs and the *Stone-Greisser Q-Square test* for *predictive relevance*. Evaluation of the structural model is carried out using the *bootstrap resampling method.* The results of the structural model analysis with the *SmartPLS* application can be seen in the figure below.
In assessing structural models, the first is to look at the *R Square* value for each endogenous latent variable. If the value of *R Square* is getting larger (close to the number 1), it can be said that the model used can explain the influence of the exogenous latent variable studied on the endogenous latent variable. Conversely, if the value of *R Square* gets smaller (close to the number 0), the model cannot explain the influence of the exogenous latent variable under study on the endogenous latent variable substantively. The value of R Square can be seen in the table below. The value of R Square can be seen in table 4. 5.5.

**Figure 4 Structural Model (*Inner Model*)**
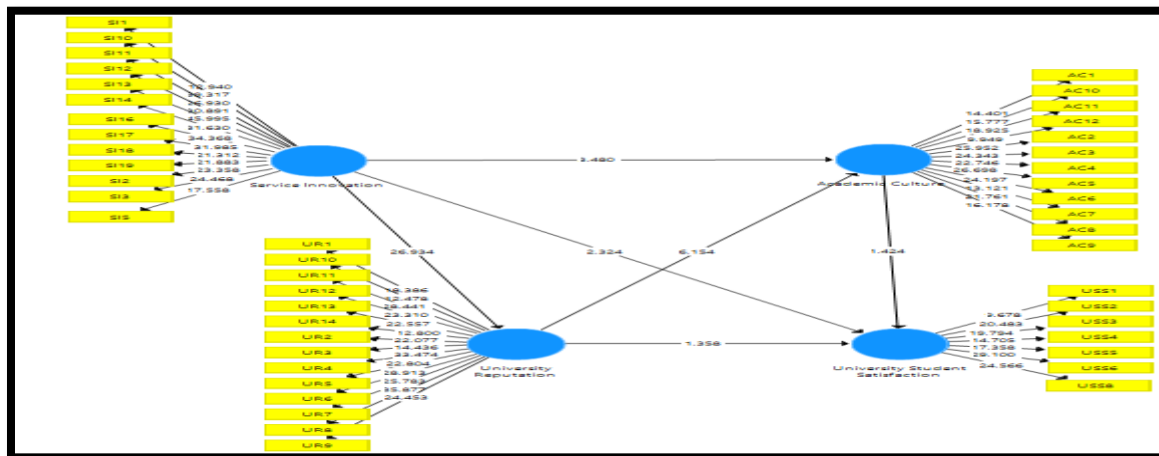


Source: Primary data processed (2021)

Based on table 4. 5.5. The value of R Square for the Academic Culture variable is 0. 480 and for the University Student Satisfaction variable of 0. 199 While University Reputation is 0.544.

**Table 4  R Square**

|  | R Square | R Square Adjusted |
|---|---|---|
| **Academic Culture** | 0.480 | 0.477 |
| **University Reputation** | 0.544 | 0.542 |
| **University Student Satisfaction** | 0.199 | 0.191 |

Source: Primary data processed (2021)

The second way to evaluate the structural model is to look at the *Stone-Greisser*

*Q-Square* value. As for calculating the value of *Q-Square* can use the formula:

$Q^2 = 1-(1 -R1^2) (1-R2^2)$

$Q^2 = 1-(1-0.477^2) (1-0.542^2)$

$Q^2 = 1 - (1- 0.227) (1- 0.244)$

$Q^2 = 0.188's$

Based on the calculation results, a *Q-Square* value of 0 is obtained. 188, which is greater than zero (0), so it can be concluded that the model has a strong predictive *relevance* value.

Hypothesis testing is intended to determine the significance of the influence between exogenous latent variables on endogenous latent variables. In this study, hypothesis testing between the influence of exogenous latent variables on endogenous latent variables (γ) and

the influence between endogenous latent variables on endogenous latent variables (β) was carried out by looking at *the path coefficient output* from the results of *bootstrapping resampling. In contrast,* indirect influences were seen on *the output of specific indirect effects.* Hypothesis testing is carried out by comparing the statistical t-values and the ~table~. The statistical t value is obtained from the bootstrapping results using *the smartPLS* application version 3.0, while the table t value for alpha 5% is 1.96. The results of testing the hypothesis of direct and indirect influences can be seen in the table below.

**Table 5 *Output Path Coefficient (*Direct Effect)**

Source: Primary data processed (2021)

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (\| O/STDEV\|) | P Values | Hypothesis status |
|---|---|---|---|---|---|---|
| **Academic Culture -> University Student Satisfaction** | 0.123 | 0.125 | 0.087 | 1.424 | **0.154** | **Rejected** |
| **Service Innovation -> Academic Culture** | 0.281 | 0.282 | 0.081 | 3.480 | **0.001** | **Accepted** |
| **Service Innovation -> University Reputation** | 0.738 | 0.740 | 0.027 | 26.934 | **0.000** | **Accepted** |
| **Service Innovation -> University Student Satisfaction** | 0.233 | 0.238 | 0.100 | 2.324 | **0.020** | **Accepted** |
| **University Reputation -> Academic Culture** | 0.459 | 0.463 | 0.075 | 6.154 | **0.000** | **Accepted** |
| **University Reputation -> University Student Satisfaction** | 0.144 | 0.141 | 0.106 | 1.358 | **0.174** | **Rejected** |

**Table 6 *Output Path Coefficient (Ind*irect Effect)**

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (\| O/STDEV\|) | P Values | Hypothesis status |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| **Service Innovation -> University Reputation -> Academic Culture** | 0.339 | 0.343 | 0.058 | 5.858 | **0.000** | **Accepted** |
| **University Reputation -> Academic Culture -> University Student Satisfaction** | 0.057 | 0.058 | 0.042 | 1.343 | **0.179** | **Rejected** |
| **Service Innovation -> University Reputation -> University Student Satisfaction** | 0.107 | 0.104 | 0.078 | 1.366 | **0.172** | **Rejected** |
| **Service Innovation -> Academic Culture -> University Student Satisfaction** | 0.035 | 0.035 | 0.027 | 1.268 | **0.205** | **Rejected** |

Source: Primary data processed (2021)

While Table 5 summarizes the direct effects, Table 6 depicts the hypotheses testing for the indirect effect. It can be concluded that service innovation toward university reputation significantly affects university reputation due to a P-value of 0.001 smaller than 0.05.

In addition, from the results of hypothesis testing, one also obtained a path coefficient value (original sample) of 0. 738. this means that the direction of the relationship between the variables of service innovation and university reputation is positive. In other words, if service innovation increases by one point, the university's reputation also increases by 0. 738.

Next, Table 5 shows that service innovation significantly affects academic culture since P-value is 0.001 less than 0.05. Besides, the value of the original sample coefficient of 0.281 was obtained.ini, meaning that the direction of the relationship between the service innovation variable and academic culture was positive. In other words, if service innovation increases by one point, then academic culture also increases by 0.281.

For hypothesis 3, the results in Table 5 show that university reputation significantly affects academic culture because P-value is 0.000 less than 0.05. The result also shows that the value of the original sample coefficient of 0.459 was also obtained.ini, meaning that the relationship between the university reputation variable and academic culture was positive. In other words, if university reputation increases by one point, then academic culture also increases by 0.459

Moreover, Table 5 depicts that Hypothesis 4 is rejected or university reputation has no significant effect on university student satisfaction. This conclusion is because statistically, the P-Value is 0.174 greater than  0.05. The result also shows that the relationship between the

university reputation variable and university student satisfaction is positive. In other words, if university reputation increases by one point, then university student satisfaction also increases by 0.144.

For hypothesis 5, Table 5 shows that it was accepted because the P-value was 0.020, smaller than 0.05. This result means that service innovation significantly affects university student satisfaction. In addition, from the results of testing the fifth hypothesis, the value of the original sample coefficient of 0.233 was obtained.ini, meaning that the direction of the relationship between the service innovation variable and the university student satisfaction was positive. In other words, if service innovation increases by one point, then university student satisfaction also increases by 0.233.

Moving on to hypothesis 6, Table 5 indicates that the hypothesis was rejected because the P-value of 0.205 is greater than 0.05. Therefore, this result can be concluded that academic culture has no significant effect on university student satisfaction. In addition, from the results of testing the sixth hypothesis, the value of the original sample coefficient of 0.035 was obtained.ini, meaning that the direction of the relationship between the academic culture variable and the university student satisfaction was positive. In other words, if academic culture increases by one point, then university student satisfaction also increases by 0.035.

Table 6 describes the indirect effects of the researched variables, especially hypotheses seven until 10. The table shows that university reputation significantly affects the relationship between service innovation and academic culture. This result means that university reputation mediates the relationship between service innovation and academic culture. This conclusion was based on the result of the P-value, which was 0.00**0** less than 0.05. Meanwhile, Table 6 shows that hypothesis 8 was rejected because statistically, the P-value of 0.205 is greater than 0.05. This result means that academic culture has no significant effect on service innovation and university student satisfaction. On the other hand, this result means that academic culture has a mediation role in the relationship between service innovation and university student satisfaction.

Furthermore, table 6 shows that university reputations toward university student satisfaction with academic culture were not a mediation variable. This conclusion was based on the P Value results, which was 0.179 greater than 0.05. The same conclusion can be drawn from Table 6 regarding hypothesis 10. It can be seen that the *P-value* value is 0.172, greater than 0.05. This result can be used to conclude that University reputation has no significant effect, meaning that it has no mediation role in the relationship of service innovation to university student satisfaction.

**Discussions**
Based on the results of causality tests between variables, both direct and indirect causality testing using the Smart PLS model, some of the findings in this study are presented in tables 4. 5.6, and 4.5.7. Hasil testing causality between research variables so that there are research findings from ten hypotheses there are five hypotheses accepted and five hypotheses rejected; these findings become interesting to be studied as follows:

*Hypothesis 1: service innovation significantly affects a university's reputation.*
This result means that the more innovative services the university provides following the needs, desires, and expectations of students will increase the university's reputation. The university's reputation is driven by the results of alumni graduates, absorption in the world of work, and the ability to excel at the national and international levels. Public trust in Ukhair will

have far-reaching implications. For alumni, for example, recognizing that Unkhair is an excellent university will provide wider access to career development, further studies, and social life. As is known, in the labor market, accreditation of study programs and institutions is a variable that is quite calculated, in addition to individual skills. College graduates from excellent and good accredited institutions will obtain a plus assessment. Thus, accreditation allows alumni to gain access to more promising careers and further studies. This result was not aligned with the studies by Feng et al. (2020) and Manohar and Marwah (2019).

*Hypothesis 2: service innovation has a significant effect on academic culture.*
This result means that the better the innovation of services provided by a university, it will be able to build a conducive academic culture so that the academic atmosphere continues to run by student expectations and users of educational services in general. The ability of universities to adapt during the Coronavirus Disease (Covid-19) pandemic is clear evidence that universities have innovative, creative, inventive, and adaptive abilities to change. These various abilities are important requirements to survive in the dynamics of very fast changes in the era of the fourth industrial revolution. This research's finding was in line with those of Abdi et al. (2018) and Feng and Ma (2020).

*Hypothesis 3: university reputation has a significant effect on academic culture.*
This result means that the better the university's reputation, the better it will be able to create a better academic culture so that the academic atmosphere is created by itself. Therefore, universities must develop research programs. Through research, new things will be found and solutions to increasingly complex problems in community life, so universities must always follow the dynamics of every problem that occurs in society so that it becomes an institution that contributes to solving problems. This result means that the finding of this current study was in line with the results of Meng & Berger, 2019 and Setiawan et al. (2020), where an organization's reputation affected its culture.

*Hypothesis 4: university reputation has no significant effect on university student satisfaction.*
This result means that if the university's reputation has not been maximized, it will encourage student dissatisfaction. Students choose universities because of the faculties and study programs that have the appeal of accreditation, and a campus that is comfortable and provides easy access to literature both online and offline is a carrying capacity to improve the university's reputation. This finding did not support the previous findings by Islam et al. (2021) and Wu et al. (2016), indicating that university reputation affects student satisfaction.

Competencies that have value can compete in an increasingly competitive world of work. The university's success is measured by the level of student satisfaction, both internal and external. Universities are said to be successful if they can provide services equal to or exceed customer expectations, because they have spent much budget on educational institutions. The university is basically for students, while the parents and society as a given process. However, it does not rule out the possibility that assessment or monitoring can be carried out by students themselves because those who have experienced Education directly and all forms of study programs that the school undergoes.

*Hypothesis 5: service innovation has a significant effect on university student satisfaction.* This means that the better the service innovation provided and designed as well as possible to provide ease of student access anywhere, it will increase student satisfaction which finally encourages loyalty by continuing to inform the family and others to use educational services at the university. Furthermore, students are generation z who are already technologically literate and have a desire for ease in activities so that service innovations that come into direct

contact with technology will have an impact that is positive and effective both in terms of time and financing. This result aligns with studies by Wikhamn (2019) and Wipulanusat et al. (2018), where service innovation affects customer satisfaction.

*Hypothesis 6: academic culture has no significant effect on university student satisfaction.* This result indicates that if the academic culture built and carried out is not optimal and consistent, it will impact student satisfaction. Students need a place of expression for their every interest, so the university must facilitate following the built academic culture. The lecture process built based on the commitment between students and lecturers will create a good academic atmosphere; lecturers are competent and able to interact with students with different characters and abilities, so building good relationships is important. The outcome then indicates a contradictory result to the findings of Dirisu et al. (2018), Soomro and Shah (2019), and Paais and Pattiruhu (2020).

It is interesting to note that of four mediating hypotheses, only one was accepted. Hypothesis 7 was that service innovation significantly affects academic culture with university reputation as a mediating variable. This indication means that the better the innovation of services provided by the university will create a conducive academic culture and support the course administratively, lecture activities, and other informal. This condition supports academic culture such as participating in Student Creativity Week, increasing entrepreneurship with entrepreneurial student programs, becoming scientists with work competitions scientific students at the faculty, university to national and international events.

The result can be said that hypotheses 8, 9, and 10 were rejected. In other words, service innovation on university student satisfaction with academic culture as a mediation variable; university reputation on university student satisfaction with academic culture as a mediation variable; and service innovation on university student satisfaction with university reputation as a mediation variable cannot be proved in this current study. In other words, hypothetical statements cannot be provided when these variables play their roles as mediating variables to create indirect relationships.

## CONCLUSIONS

The results of the study show that from the hypotheses that were built, there is still a hypothesis that is rejected, meaning that the special University and the Faculty, and the academic community work together to have a vision and mission that is following the university strategic plan so that the flow of mechanisms in the fields of administration, lectures, and cooperation runs even better. Due to the academic culture, service innovation and reputation of the university have not been able to encourage student satisfaction. Students are potential customers who will become ambassadors of information about the university based on experience and perceived satisfaction.

The university further improves the service system and builds good communication and interaction so that it will be reflected in the increasing reputation of the university. Increasing accreditation of study programs, providing a forum and assistance for students who have talents both in academic, arts and sports, and other fields so that the reputation of the university and academic culture will be better

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