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Managerial Factors and Income-Generation: The Mediating Role of Top Management Support at an Indonesian State University

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Abstract

The concept of higher education autonomy and income-generation for university operations is a complex and multifaceted issue that varies from one country to another. Income-generation is an activity that helps state universities improve their quality. This study attempted to analyze the direct and indirect effects of management supervision, management participation, management qualification, and top management support on the implementation of income-generation. The sample consisted of 111 staff in charge of income-generation activities in an Indonesian state university. A survey was used for online data collection. The data were analyzed using structural equation modeling. The results show that management supervision, management qualification, and management participation have a positive effect on top management support ($\beta = .34, p < .01$), ($\beta = .21, p = .01$), and ($\beta = .26, p < .01$), respectively. Besides, management supervision and management participation have a positive effect on income-generation implementation ($\beta = .25, p < .01$) and ($\beta = .39, p < .01$). Management qualification has a negative effect on income-generation implementation ($\beta = -.00, p = .49$). Top management support mediated management supervision ($p = .03$) and management participation ($p = .07$); however, it did not mediate the relationship between management qualifications and the implementation of income-generation ($p = .11$). This research shows that top management support plays an essential role in the implementation of income-generation, especially in the higher education level. The findings suggest that top management should facilitate university staff to improve their ability and skill so that they can manage income effectively.

State universities in Indonesia that possess a legal entity have the power to engage in income-generation activities, signifying that educational funding sources are not solely reliant on the government (Sahroni, 2021; Nur et al, 2018). A state university with a legal entity is a state university founded by the government with the status of autonomous. This means that state universities have been given autonomous rights to be more independent so they can explore other sources of income. Being a state university, the institution endeavors to actively seek funding avenues beyond government-provided educational funding through business unit development. Generally, income at universities is divided into two categories: income received from academic and non-academic aspects. The income from the academic part is the single tuition fee. In contrast, the non-academic income consists of program grants, national/international seminar fees, workshops, rent of rooms, buildings, shops, rent of laboratory, and journal management incentives (Mahmud et al., 2022).

Based on university regulation number 25 of 2018 in one state university (Mahmud et al., 2022), the income raised from institutional development contributions is managed by the business development agency to increase university income after a single tuition fee. Prior to the policy implementation in 2018, the university operated as a public service institution. In that year, its sole source of income was from the ministry of education, culture, research, and technology, specifically referred to as state services university income, amount to 384.310 billion rupiah. However, at the beginning of 2019, the university initiated a transition from being a public service university to becoming a state university with legal entity. Unfortunately, the funding allocated from the ministry of education, culture, research, and technology for the beginning of 2019 decreased to 375.626 billion rupiah. To bridge this budgetary gap, the university had to engage in income-generating activities, which were implemented as a means of ensuring the sustainability of its performance. By the end of 2019, the university still faced challenges in financing its operational expenses. Throughout the year, income-generation activities yielded 61 billion rupiah, while the actual funding realization exceeded 68 billion rupiah. This resulted in a deficit of 7 billion rupiah required to cover operational costs. Consequently, the income generated fell short of meeting the financial needs of each unit or faculty within the university.

Based on preliminary observation, one critical problem is that the person in charge of the activities is less transparent about the number of funds obtained and reported. They do not use the virtual account of the unit, faculty, or university for payment of participants' contributions. Thus, the funds submitted to the university are less than that obtained. It happened because the university does not have proper supervisory procedures for income-generation projects, which has led to income-generation project failure (Adan & Keiyoro, 2017).

Besides, people involved in income-generation activities have less optimum academic orientation, unaccountable, unprofessional, non-independent, non-transparent, and are non-compliant with income-generation management (Siswanto et al., 2013). These problems resulted in less optimum and maximum income-generation. The profile of management qualifications, such as the age of staff, educational attachment, and training or seminar, affects the implementation of income-generation projects (Miranda et al., 2016). The participation of staff and all academic communities influences the implementation of income-generation programs (Frezghi & Tsegay, 2019; Kerei, 2014). Without their support, educational institutions will face financial challenges.

The research about income-generation in higher education has not been analyzed. The previous research is mostly in the secondary school context (Adan & Keiyoro, 2017; Nair, 2018; Odundo & Rambo, 2013). Based on Miranda et al. (2016), future research needs to analyze the role of top management support. This study aimed to explore the direct and indirect effects of the relationship between management supervision, management participation, the profile of management qualification, and top management support on income-generation implementation. To illustrate the preparation of income-generation policies and to evaluate the income-generation policies that have been conducted. The implementation of income generating is very necessary to increase income so that it can be used to improve the welfare of employees and students. However, there are still obstacles in the human resources aspect of the management. The employee's mindset and commitment are very necessary to synergize together. Preview research revealed some factor influences the implementation of income generation, such as management supervision (Delmonte, 2021; Ahmad et al., 2015; Adan & Keiyoro, 2017; Kerei, 2014); management qualification (Miranda et al., 2016; Kipkoech, 2018; Yirdaw, 2016; Nair, 2018); management supervision and management participation (Abankina et al., 2018; Nyamwega, 2016); and top management support as mediation (Alshubiri, 2020; Fennely & Perry, 2017; Kerei, 2014; Liu & Gao, 2020).

Furthermore, this research applied the resource dependence theory (Aldrich, 1976), which successfully explains institutional behavior to carry out business initiatives as additional income. The behavior of top managers in managing the organization and its resources can mediate the successful

implementation of every policy at the university, for example, the income-generation policy. Top management support has an essential role in the implementation of income-generation. Moreover, this research contributes to the university's readiness toward its legal entity by considering the amount of generated income. The existence of income-generation has a significant impact on the university's finances. In its management, there are still several obstacles, including the skills of management resources, leadership support, and policies. Therefore, it is necessary to do more in-depth research related to its implementation. To develop the quality of graduates and performance of state universities, currently, state universities in Indonesia are given autonomy to be independent. The autonomy of higher education in question is in the fields of finance, management, operations, and resources. Everything is intended to improve sustainable higher education performance. The main aspect is the sustainability of funding, which does not depend on the government. So, the strategy used is to identify sources of income from business units or activities that can generate income. Currently, in Indonesia, there are 21 state universities with legal entities. The researcher's reason for choosing a state university was that this state university was only two years old and was in a state of transition from a public service agency university. It is necessary to study the aspects of top management support, management qualifications, management supervision, and management participation in supporting the implementation of income-generation.

Literature Review

The development of state universities into legal entity state universities requires support from all university staff and faculty. The autonomy policy provided cannot run smoothly without policies from the campus and the strength of human resources. The funding aspect, for example, requires understanding, commitment, and the ability of staff to create income-generation. Income-generation can increase financing so that it does not depend on government funding. This section explains the relevant literature, theories, and previous studies to support the linkage between the study variables of management supervision, management participation, management qualification, top management support, and income-generation implementation.

Theory of Behavioral Integration

The behavioral integration theory is the degree to which the top management group engages in joint and collective interactions (Venugopal et al., 2018). In an extension of the top manager's perspective, an integrated behavior reflects collaborative behavior, exchange of information, and shared decision-making through the sharing of resources, information, and decisions. These three elements of a behaviorally integrated team are interdependent and mutually reinforcing. When the behavioral integration of top management is high, they tend to exchange more information. In turn, it leads to an increase in their ability to know about different areas of knowledge expertise within the organization. When employees and top management collaborate, they can produce innovations or breakthroughs that can improve organizational performance (Elidjen et al., 2022).

Research Dependence Theory and Income-Generation

This study applies the resources dependency theory (RDT) to explain the behavior of educational institutions to start-up business enterprises for supplemental income so that institutions can survive in meeting budgetary needs (Odundo & Rambo, 2013). The RDT explains how an organization has a dependence on the external environment to meet its needs in terms of financial, physical, or information. This dependence causes the intervention of the external environment in the achievement of organizational goals and can threaten the existence of an organization (Heeley et al., 2006; Hillman et al., 2009).

In terms of meeting financial needs, higher education carries out an activity called income-generation (IG). The income-generation university is one of the implementations of RDT. Income-generation activities play a role as the financial resources of educational institutions. Without realizing it, IG activities have been operating for many years. There needs to be a management policy that follows the

principles and regulations (rector's regulations and government regulations) in managing higher education revenues so that the absorption of funds from income-generation is more accountable, effective, and efficient. Universities can implement policies to increase their income from academic and non-academic activities. Examples of academic activities are single tuition fees (Nir & Miran, 2006) and institutional facility donations. In contrast, non-academic activities include waqf (Usman & Ab Rahman, 2021), university assets, cooperation with partners and industry, and grants. Most of the income is used for infrastructure development (Kiarie et al., 2019), university operational expenses, and supporting academic and non-academic activities of students and staff (Nyeh & Kpee, 2019).

Management Supervision and Top Management Support

The implementation of sustainable income-generation in state universities requires good management practices to implement the project so that the project runs smoothly and in a structured manner (Delmonte, 2021). In line with that, Ahmad et al. (2015) stated in determining the success of university income-generation, university management plays an important role. The IG management should develop a workable supervision system. Supervision is the process of ensuring that all activities are carried out by what has been planned. The supervision process is also known as the process of ensuring that actual activities confirm the planned activities (Stoner et al., 1995). There is an effect of management supervision on implementing income-generation as an alternative source of school financing. Most schools do not have proper supervisory procedures for income-generation projects, which has led to many income-generation projects' failure (Adan & Keiyoro, 2017; Kerei, 2014). The income generation comes from the rent of a canteen and business unit development. This activity also exists at the state university level in generating income.

Management supervision influences top management support, meaning that the supervision carried out by the heads of units, faculties, and study programs contributes to the support of the Chancellor's policies regarding income generating management. The performance of a higher education institution is regulated, among other things, in the rector's policy. The rector's policies are prepared based on the management's policy skills. There are two main things in carrying out supervision activities, namely, monitoring and reviewing (Gali & Schechter, 2020). Both of these are part of vital management functions. This argument leads to the following hypothesis.

H1: Management supervision has an influence on top management support

Management Qualification and Top Management Support

Nair (2018) stated that most of the school's income-generation project management has few qualified personnel for supervision, such as unprofessional management of income-generation projects, ineffective policies on projects, inadequate central administrative support, and goodwill affecting the rector's policy support. Management qualifications affect the implementation of income-generation. It is known that management training that managers attend can increase knowledge in managing education funds, including income-generation (Adan & Keiyoro, 2017; Miranda et al., 2016). Interpersonal skills play an essential role in income-generation management. Staff or manager training can improve income-generation management to avoid shortages in capital owned by schools (Kipkoech, 2018; Yirdaw, 2016). Staff members are involved in making decisions about income-generation projects to be implemented. Management participation will increase the efficiency and profitability of the income-generation unit at Kenyatta University (Ndolo et al., 2011). This argument leads to the following hypothesis.

H2: Management qualification has an influence on top management support

Management Participation and Top Management Support

Like universities in general, state universities also need human resources to manage IG activities. The existence of staff helps universities to launch operational activities and accelerate universities to achieve goals, especially those related to IG. Even though a university has a large capital and a large area of land, it will be in vain if it does not have human resources to help. Staff who have relevant knowledge

and experience skills to run a business are needed by universities in implementing IG rather than the quantity of staff (Miranda et al., 2016). Therefore, IG activities should look at recruitment and firing policies and procedures and focus on staff qualifications. Qualification of the staff can be seen by the age, educational attachment, training or seminar of the staff (Miranda et al., 2016); having experience in carrying out income-generation activities, financial training, certain academic degrees, and communication skills can play a role in determining top management support (Holland, 2011). This argument leads to the following hypothesis.

H3: Management participation has an influence on top management support.

Management Supervision and Income-Generation Implementation

Monitoring and Evaluation are the ways to supervise the staff in an organization (Miranda et al., 2016). The supervision team has a check and balance goal between the plans prepared and their realization in the field. Management supervision carried out by unit, faculty, and university leaders has a leading role in supporting top management for income-generation implementation programs. A supervision team can be formed to promote a good working atmosphere and more effective collaborative mechanisms between and among IG's stakeholders. The management continuously evaluates activities that generate income to show the obstacles and successes in carrying out each activity. All findings are reported to the rector for decision-making consideration (Alshubiri, 2020) so that all policies can benefit university development (Abankina et al., 2018; Nyamwega, 2016). This argument leads to the following hypothesis.

H4: Management supervision has an influence on the implementation of income-generation.

Management Qualification and Income-Generation Implementation

Staff need to support income-generation projects so that all activities run smoothly. Lack of involvement of staff members will hinder the implementation of income-generation policies (Miranda et al., 2016; Nair, 2018). The success of income-generation depends on management and staff participation that can make time for supporting income-generation projects. Management support has a high power to create the regulation of university activities, one of which is the regulation of income-generation. Besides, teachers, committee boards, parents of students, and stakeholders affect the management of income-generation implementation (Frezghi & Tsegay, 2019; Kerei, 2014). A previous study explained that managers and staff affect income-generation implementation (Adan & Keiyoro, 2017; Miranda et al., 2016). The lack of funding for initial capital, the qualification of the personnel (teachers and employees), and the less support from the teacher, parent, and stakeholder makes education institutions face financial challenges. This argument leads to the following hypothesis.

H5: Management qualification has an influence on the implementation of income-generation.

Management Participation and Income-Generation Implementation

Higher education income related to the external environment requires universities to develop strategies aimed at tackling excessive control from the external environment. The most important note in RDT is the proactive management of the competitive external environment to support its income (Pautz, 2014). RDT has been implemented to explain how organizations can reduce dependency and uncertainty in their organizational environment. Understanding organizational behavior requires an understanding of the behavior in the atmosphere of the organization. Organizations reduce the external influence and increase their organizational strength (Aldrich, 1976). The organization makes some efforts by forming interlocks, alliances, joint ventures, and mergers and acquisitions to overcome dependencies and improve organizational autonomy and legitimacy. Meanwhile, the resource dependency theory is one of the organizational theories that characterize organizational behavior (Schmidt & Peachey, 2003).

H6: Management participation has an influence on the implementation of income-generation.

Top Management Support

The policies set by the leadership regarding income generation management become a mediation variable for the manager's qualifications for the implementation of income-generation (Kerei, 2014).

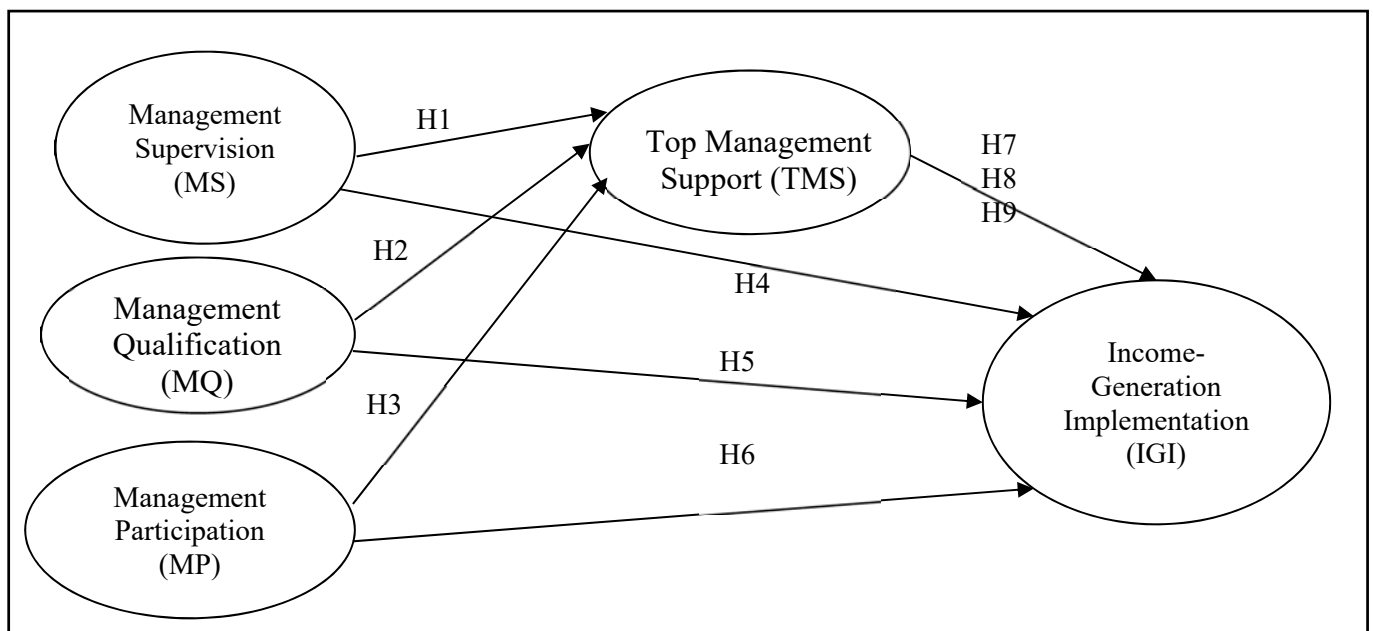
Management qualifications of management staff play a role in implementing income generation through rector policies. Experience and academic qualifications can contribute to the implementation of income generating (Alshubiri, 2020). The rector's policies related to providing input, evaluating the implementation of income generating activities, transparency, and accountability can mediate management qualifications towards increasing income generating (Liu & Gao, 2020). The RDT further holds that a high firm power will strengthen the relationship between controlling orientation (CO) and outcomes (Pfeffer & Salancik, 1978). No matter how strong external forces are, they will not affect implementing income-generation without first affecting the behavior of human agents within the organization (Liang et al., 2007). Thus, we argue the greater the management of the university, the better will be its implementation of income-generation if there is a role from top management support. Our theoretical framework is grounded in the proposition that management of income-generation in a university affects income-generation implementation after being mediated by the top management.

Top management support and the commitment and involvement of all employees are essential to an effective emergency action plan. Staff should review plans with the leader when initially put in place and re-evaluate and amend the plan periodically whenever the plan itself or employee responsibility changes (Fennely & Perry, 2017). Supervision is more efficient than traditional management methods, such as functional divisions in formal hierarchical organizations, to effectively implement income-generation projects (Boadi, 2006; Kerei, 2014; Mutula, 2001). In Management participation, staff can provide input to evaluate the implementation of income-generation activities so that transparency and accountability can play a role in increasing income-generation through top management support (Liu & Gao, 2021). Thus three more hypotheses are proposed.

- H7: Top management support will mediate the relationship management supervision on income-generation implementation.
- H8: Top management support will mediate the relationship management qualification on income-generation implementation.
- H9: Top management support will mediate the relationship management participation in income-generation implementation.

Conceptual Framework of the Research

Figure 1
Research Conceptual Framework



This research is based on the concept that income-generating activities such as those carried out by companies have challenges for each management. Income generation improves the quality of education, which can be achieved using several public financing techniques. One of them is the technique of gradually reducing public funding so that universities do not experience funding shortages (Kholmuminov et al., 2019). So, that ultimately threatens the existence of the organization. Previous research has already pointed out that management supervision influences income generation implementation (Delmonte, 2021; Ahmad et al., 2015; Stoner et al., 1995; Adan & Keiyoro, 2017; Kerei, 2014). Furthermore, management qualification also affects income generation (Adan & Keiyoro, 2017; Miranda et al., 2016; Kipkoech, 2018; Yirdaw, 2016; Ndolo et al., 2011). The management and staff participation affect the implementation of income generation. The previous research shows that staff and member faculty have an influence on the implementation of income generating management (Frezghi & Tsegay, 2019; Kerei, 2014). The existence of top management support as an intervening variable was able to mediate the effect of management supervision, management qualification, and management participation on the income generating implementation (Kerei, 2014; Fennely & Perry, 2017; Alshubiri, 2020; Liu & Gao, 2020). Figure 1 represents the study's conceptual framework.

Method

Research Design

This quantitative research aimed to evaluate the direct and indirect effects of management supervision, management qualification, management participation, and top management support on the implementation of income-generation. Factors affecting income-generation were decided after the team leader and income-generation members conducted a joint analysis by finding literature and observations in each unit, faculty, and study program within a state university with a legal entity in Indonesia. Therefore, the research was conducted at one of Indonesia's legal entity state universities.

Sample and Data Collection

The population consists of 150 staff with charge in income-generation activities. By using the Slovin's formula (5%) (Slovin, 1960), 111 samples were obtained. Simple random sampling was used as a sampling technique, so 111 participants were randomly assigned to research because we wanted to ensure that each participant had the same opportunity to be a part of this research. The sampling technique used was simple random sampling. Meanwhile, the data collection was done through questionnaires that were distributed online using the Google Forms platform. Data was collected from April to July 2022.

Measures

The questionnaire for this research was created based on the findings of previous empirical studies and background theories. This step ensures that the questionnaire is grounded in existing research and relevant theoretical frameworks. The initial questionnaire was in English, and it was translated into Bahasa, presumably the Indonesian language. The process of adaptation of the items from previous research in the translation process (Beaton et al., 2000; Setyandari et al., 2019), the translation was performed by academics who are fluent in both English and Bahasa, ensuring accuracy and cultural appropriateness. Then, in the back-translation process, the Bahasa version of the questionnaire was translated back into English. This step ensures the accuracy of the translation and helps identify any discrepancies or errors that might have occurred during the initial translation process. Likert scale was used with a range of values from 1 to 5 to measure the perceived level of survey of survey subjects (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. Table 1 shows the information about all the scales in this research.

The Implementation of Income-Generation

The implementation of income-generation is an alternative implementation of an additional source of income for higher education. To develop the measurement of IGI, this research used the length of operation as an indicator (Miranda et al., 2016). The 5-point Likert scale included 6 items that were

developed from previous research by Miranda et al. (2016). An example for an item was “Good income-generation management helps the university’s operational cost efficiency every year”.

Management Supervision

Management supervision is supervised by Heads of Units, Faculties, and Study Programs. The indicators of management supervision are ‘monitoring’ and ‘controlling’ (Gali & Schechter, 2020; Miranda et al., 2016). The 5-point Likert scale included 7 items that developed from previous research ‘controlling’ (Gali & Schechter, 2020; Miranda et al., 2016), which consists of 7 items. An example for an item was “Coordinate the course of income-generation activities”.

Management Qualification

Management qualification is the expertise possessed by managers/teams in generating income. Management qualification has several indicators, including training, workshops, and seminars (Miranda et al., 2016). The 5-point Likert scale included 4 items that were developed from previous research (Miranda et al., 2016). An example for an item was “Have interpersonal skills”.

Management Participation

Management participation is the role of managers/staff in supporting the achievement of income-generation. For management participation, this study used the ‘commitment’ and ‘motivation’ of the staff as indicators (Adan & Keiyoro, 2017). To develop the measurement of management implication, this study used the 5-point Likert scale included 5 items that were adopted from previous research (Adan & Keiyoro, 2017). An example of an item was “Contribute to deciding on the types of income-generation activities”.

Top Management Support

The instrument of TMS was developed from previous research (Riaz & Azmi, 2015). The top management support is all the rules set by the Chancellor or Rector related to income-generation programs. Top management support has several indicators: the provision of resources, structural arrangements, communication, expertise, and power (Riaz & Azmi, 2015), which consists of 5 items. An example of an item was “Provision of infrastructure, equipment, and laboratory equipment to increase income-generation”.

Table 1

Items Development of Variables

Variables	Code	Items	Reference
The implementation of income-generation	IGI1	Income-generation program development planning has increased the university's income capacity	Miranda et al. (2016)
	IGI2	Good income-generation management helps the university’s operational cost efficiency every year	
	IGI3	The development of human resources that manage income-generation consistently has helped the University in improving its financial and operating conditions	
	IGI4	Instructions from superiors to subordinates regarding the amount of income-generation to increase the financial stability of the university	
	IGI5	The existence of income-generation has contributed to building a good image of the university	
	MS6	Since its inception, income-generation has consistently generated income for the university	
Management supervision	MS1	Coordinate the course of income-generation activities.	Gali and Schechter (2020)
	MS2	Seek support from well-wishers/donors	
	MS3	Supervise the transactions involving income-generation activities	
	MS4	Monitoring income generating activities	
	MS5	Assessing appropriate income-generation projects/activities	

Table 1 (Continued)

Variables	Code	Items	Reference
	MS6	Evaluating income-generation activities	
	MS7	Ensuring accountability of all income-generation activities implementation units	
Management qualification	MQ1	Have interpersonal skills	Miranda et al. (2016)
	MQ2	Have a professional academic qualification in bachelor/master/doctorate	
	MQ3	Have entrepreneurial skills	
	MQ4	Have the capital and time to start and run income-generation activities	
Management participation	MP1	Contribute to deciding on the types of income-generation activities	Adan and Keiyoro (2017)
	MP2	Organize every activity to participate in increasing income-generation	
	MP3	Actively participate in every activity that generates income-generation	
	MP4	Provide proposals that generate income	
	MP5	Presenting new ideas that generate income.	
Top management support	TMS1	Provision of infrastructure, equipment, and laboratory equipment to increase income-generation	Riaz and Azmi (2015)
	TMS2	There is a distribution of income-generation percentages obtained by each unit of seminars, workshops, laboratory rentals, building rentals, catering services, etc.	
	TMS3	The rector's policy on income-generation is socialized to all university academics.	
	TMS4	Giving freedom to each unit to carry out activities that generate income	
	TMS5	The rector's policy supports the development of income-generation based on national regulations regarding additional income in higher education.	

Ethical Consideration

This research has obtained ethical clearance for data collection involving human participants. Obtaining ethical approval is a crucial step in ensuring that research involving human subjects is conducted responsibly and respectfully. Prior to conducting the initial survey, an ethical permit application and research protocol were requested by the ethics committee of the Faculty of Economics and Business of Universitas Negeri Semarang, Indonesia, to obtain ethical approval with references No. B/12457/UN37.3.1/PG/2022, April 2022.

Results

Validity and Reliability Test

The validity and reliability of the research questionnaire were tested using convergent validity. The criteria used to determine the validity of the questionnaire refer to the previous description that the factor loading is more significant than .05 to .06. The simultaneous equation structure analysis results with the Warp PLS approach on the combined loadings and cross-loadings table variables have a more significant loading factor equal to .05. Each is significant ($p < .001$). Thus, the research questionnaire fulfils convergent validity. Furthermore, the measurement of reliability used Cronbach's alpha. According to Hair et al. (2014), Cronbach's alpha is $>.07$, and value $> .06$ is still accepted. So, this research instrument meets the reliability criteria as shown in Table 2.

Table 2
Convergent Validity and Reliability Test Results

Code	Convergent Validity					Cronbach's Alpha
	Management Supervision	Management Quality	Management Participation	Top Management Support	Income-Generation Implementation	
MS1	.70					
MS2	.64					
MS3	.81					
MS4	.89					.90
MS5	.87					
MS6	.84					
MS7	.82					
MQ1		.72				
MQ2		.62				
MQ3		.77				.72
MQ4		.83				
MP1			.85			
MP2			.84			
MP3			.90			.91
MP4			.85			
MP5			.86			
TMS1				.76		
TMS2				.75		
TMS3				.73		.83
TMS4				.80		
TMS5				.80		
IGI1					.81	
IGI2					.92	
IGI3					.90	
IGI4					.89	.92
IGI5					.80	
IGI6					.75	

Model Fit and Quality Indices

Table 3 shows the model in this research meets the statistical requirements to be used to test the hypothesis.

Table 3
Model Fit and Quality Indices

No.	Model Fit and Quality Indices	Criteria Fit	Reference	Result	Interpretation of Fit
1.	Average path coefficient (APC)	$p < 0.05$	Kline (2010)	0.253 $p < .001$	Good
2.	Average R-squared (ARS)	$p < 0.05$	Kline (2010)	0.613 $p < .001$	Good
3.	Average adjusted R-squared (AARS)	$p < 0.05$	Kline (2010)	0.600 $p < .001$	Good
4.	Average block VIF (AVIF)	Acceptable if ≤ 5 , ideally ≤ 3.3	Kock (2017)	2.252	Ideal
5.	Average full collinearity VIF (AFVIF)	Acceptable if ≤ 5 , ideally ≤ 3.3	Kock (2015)	2.742	Ideal

Table 3 (Continued)

No.	Model Fit and Quality Indices	Criteria Fit	Reference	Result	Interpretation of Fit
6.	Tenenhaus GoF (GoF)	small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36	Wetzels et al. (2009)	0.63	Ideal
7.	Sympson's paradox ratio (SPR)	Acceptable if ≥ 0.7 , ideally = 1	Kock (2017)	0.86	Ideal
8.	R-squared contribution ratio (RSCR)	Acceptable if ≥ 0.9 , ideally = 1	Kock (2017)	1.00	Ideal
9.	Statistical suppression ratio (SSR)	Acceptable if ≥ 0.7	Kock (2017)	1.00	Ideal
10.	Nonlinear bivariate causality direction ratio (NLBCDR)	Acceptable if ≥ 0.7	Kock (2017)	1.00	Ideal

Structural Equation Modelling (SEM)

This study used statistical analysis to answer research questions and test hypotheses by analyzing and testing the empirical model. It explains the relationship and interdependence of research variables. This model was developed when the theoretical basis for the model's design was weak or had not been found.

This study also used structural equation modeling (SEM) with warp partial least square (PLS). SEM-PLS is a causal modeling approach that aims to maximize the variance of the criterion latent variable that can be explained by the predictor variable (Hair et al., 2014). In this study, some indicators do not meet the reflective measurement model, so it is formative. The PLS is a powerful analytical method because it does not require many assumptions, and the sample size can be small or large (Hair et al., 2014). PLS can not only be used as theoretical confirmation (hypothesis testing), but it can also be used to build relationships for which there is no theoretical basis or for proposition testing.

The R^2 value for the top management support variable is .51, which means that management supervision, management qualification, and management participation can explain the policy of top management support of 51.00% and the rest amounting to 49.00% influenced by other variables outside of this research model. The amount of the contribution of the three variables, namely management supervision, management qualification, and management participation together in increasing employee involvement, is high, above .20. Furthermore, R^2 for the IGI variable is .72, which means that the management supervision, management qualification, management participation, and top management support variables explain that the implementation of income-generation of 72.00% and the remaining 38.00% are influenced by other variables outside of this research model.

This study confirmed management supervision has an effect on top management support ($\beta = .34$; $p < .001$). So, H1 is accepted. Furthermore, management qualification has an effect on top management support ($\beta = .21$; $p = .010$). Thus, H2 is accepted. Management participation has an effect on top management support ($\beta = .26$; $p = .002$). So, H3 is accepted. Management supervision has an effect on the implementation of income-generation ($\beta = .25$; $p = .003$). So, H4 is accepted. However, contrary to the prediction, the results indicated that management qualification does not directly affect the implementation of income-generation ($\beta = -.003$; $p = .49$). As a result, H5 is rejected. Meanwhile, management participation has an effect on the income-generation implementation ($\beta = .33$; $p < .001$). Additionally, according to the indirect effect of management supervision on income-generation implementation, H7 is accepted ($\beta = .13$; $p = 0.03$). Besides, the indirect effect of management qualification on income-generation implementation through top management support is insignificant ($\beta = .08$; $p = .111$). So that, H8 is rejected. The variable of top management support is a mediation of the effect of management participation on the implementation

of income-generation ($\beta = 0.10$; $p = .07$. It means the top management support variable is a mediating variable in management participation in generating income-generation. So, H9 is accepted.

Figure 2
Research Result with Loading Values

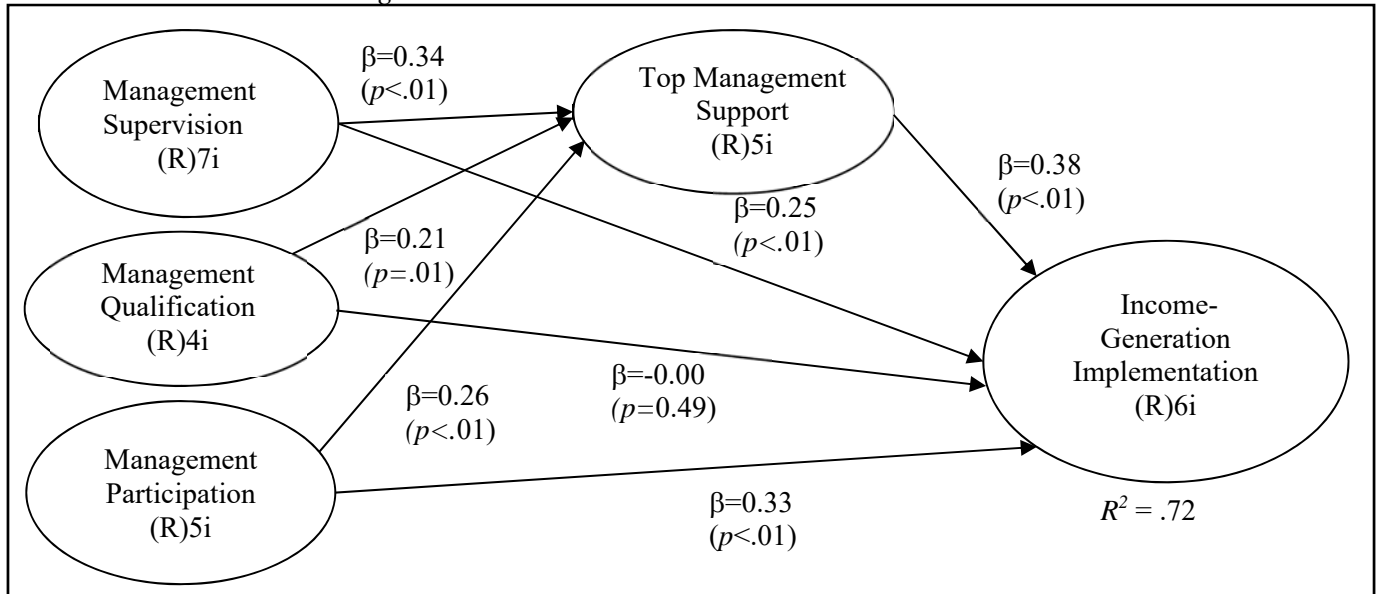


Table 4
Summary of Hypothesis Testing Results (Direct Effect)

Hypothesis	Explanatory Variable	→	Response Variable	Path Coefficient	p-value	Note
1	Management supervision	→	Top management support	0.335	<.001	Accepted
2	Management qualification	→	Top management support	0.221	.010	Accepted
3	Management participation	→	Top management support	0.255	.002	Accepted
4	Management supervision	→	Income-generation Implementation	0.252	.003	Accepted
5	Management qualification	→	Income-generation Implementation	-0.003	.489	Rejected
6	Management participation	→	Income-generation Implementation	0.328	<.001	Accepted

Table 5
Summary of Hypothesis Testing Results (Indirect Effect)

Hypothesis	Explanatory Variable	→	Intervening Variable	→	Response Variable	Path Coefficient	p-value	Note
7.	Management supervision	→	Top management support	→	Income-generation Implementation	0.128	.025	Accepted
8.	Management qualification	→	Top management support	→	Income-generation Implementation	0.081	.111	Rejected
9.	Management participation	→	Top management support	→	Income-generation Implementation	0.098	.065	Accepted

Discussion and Conclusion,

Discussion of Main Results

The results of this study indicate that management supervision affects top management support for the implementation of income-generation. Supervision activities on campus are carried out by the head of units, faculties, and study programs, contributed to the top management regarding the implementation of income-generation. The top management's policies are formulated based on management skills. These findings prove that management supervision has an effect on additional sources of income (Nir & Miran, 2006). There are two main things involved in supervision activities: monitoring and review (Gali & Schechter, 2020) are vital in management.

The unit, faculty, and study program leaders, as internal supervisors, also try to find obstacles to implementing the program. Their task is to monitor whether the top management team's decisions and activities are in the organization's interest (Boivie et al., 2016; Mcdonald & Westphal, 2017). Internal supervision was positively related to top management (Waal et al., 2018). The management also conducts a review by clarifying (Muda et al., 2020) to evaluate the success factors and measure the success achieved within a certain period. Monitoring and reviewing as an element of new public management support leadership know-how and help leaders feel better in formulating decision-making (Hossain, 2018; Ollila, 2008). Leaders have informational roles, including a monitor function that requires finding internal and external information about things that can affect the organization and conducting a SWOT analysis (Abankina et al., 2018; Schmidt & Peachey, 2003).

The management qualification, such as participation in training, workshops, and seminars, also affects top management support. If managers join those activities, the broader understanding will be valuable expertise for the work. So, they can provide input for top management in formulating policies related to income-generation. Participation in the managerial training program can enhance the involvement of top management decision-making (Furlan et al., 2019; Haryanto, 2021). Staff/manager training can improve income-generation management so that there should be no shortages in entrepreneurship (Kipkoech, 2018; Yirdaw, 2016). Qualification encourages a person to have special skills. Knowledge and experience are crucial things in the qualification process.

The management and staff support the participation in the direction of units that can generate university revenue. The manager's role in commitment and motivation can provide strong support for the top management. Commitment is consistent in delivering the best performance for the organization, while motivation is the impetus for actions (Lambrou et al., 2010; Pautz, 2014; Walumbwa et al., 2011). The commitment and motivation of managers and staff can be seen from the efforts to contribute thoughts and energy to improve top management support actively. Increasing employee motivation can enhance organizational effectiveness and affect policymakers in the education sector (Hanasya & Majid, 2018). If the commitment and motivation of management and staff are high, it will also play a role in determining the top management policy on generating income implementation.

The following result states that management supervision affects the implementation of income-generation. Resources dependence theory explains that effectiveness is related to proactive management of a competitive external environment that supports its efforts to generate income (Pautz, 2014). Proactive management is required to generate revenue. Past research revealed that most schools do not have proper supervision procedures for income-generation projects. The supervisor who has work-family and family-work conflict affects supervisees (Malik & Iqbal, 2021), which led to the failure of many income-generation projects (Adan & Keiyoro, 2017). The findings of this study somehow cannot represent other schools. The leadership contributes to the supervisory function well. For example, they coordinate the running of income-generation activities, seek support from sympathizers/donors, and supervise and monitor transactions involving income-generation activities.

Then, management participation affects the implementation of income-generation. Heads of units, faculties, and study programs are responsible for following the duties and functions according to the position. Unprofessional management of income-generation and ineffective policies can hinder the implementation of income-generation (Garcia, 2017; Zhao & Wallis, 2014). The university has made efforts to increase institutional capacity management in education and learning services. Besides, it also improves the institution's image nationally and internationally, carries out research activities, increases publications, serves the community, and manages assets as income generators to utilize national and regional partnership networks.

Management qualifications do not affect income-generation. The qualifications possessed have not been maximally realized in actual actions that contribute to the implementation of income-generation, so interpersonal skills do not play an essential role in generating income management. It can occur because the potential for interpersonal skills has not been fully applied, such as interacting effectively with others and initiating, maintaining, and developing productive relationships (Miranda et al., 2016). The income-generation implementation needs to emphasize the quality of staff who have the necessary knowledge, skills, and relevant experience to run a business, not the quantity or number of staff (Mutula, 2001). Furthermore, it is necessary to encourage activities to increase their qualifications. Not only that, if the staff in charge of activities that generate income in higher universities dare to improve managerial skills, the management can achieve higher education goals more effectively and efficiently (Mahmud et al., 2023).

Management training can increase knowledge in managing education funds, including income-generation (Adan & Keiyoro, 2017). The top management support regarding income-generation implementation becomes intervening variables for management supervision and management qualifications to implement income-generation (Kerei, 2014). The results showed that the top management support as an intervening variable could mediate management supervision and management participation in the income-generation implementation but is not strong enough. The top management support, which can mediate the impact of the management supervision and management support for the income-generation implementation, proves that the top management support that the university has carried out is sufficient to support the income-generation implementation towards the legal entity state universities.

The management qualification does not affect the implementation of income-generation. Even though top management support is presented as an intervening variable, top management support has not been able to mediate the impact of management qualifications on the income-generation implementation (Adan & Keiyoro, 2017; Boadi, 2006). The top management support needs to encourage management staff to develop better qualifications to take the next educational level and increase their entrepreneurial and interpersonal skills.

Limitations

This study only involved one prominent university in Indonesia. It means that its result is based on only one university's perception. Thus, it does not represent the condition of other universities in Indonesia, which could be different. The number of samples in this study is only 111 samples, which might be found to be too little for income-generation research.

Implications for Behavioral Science

The implications of this study will assist the state university with a legal entity in managing income generation. The management of income-generation should give staff hard/soft skills development to boost their capabilities in managing income-generation, including having interpersonal skills, academic qualifications, entrepreneurial skills, capital, and time to start and run income-generation projects and activities. The leader or the top management of income generation needs to demonstrate good leadership behavior so that it will have an impact on organizational innovation (Siswanto et al., 2022), for example, the ideas regarding how to generate income. If necessary, top management needs to carry out strategies like

giving staff a chance to study and visit other universities so they can find out how these universities manage income-generation. If the staff in charge of activities that generate income dare to improve managerial skills, the management can achieve higher education goals more effectively and efficiently (Mahmud et al., 2023). Besides, top management needs to encourage management staff to develop better qualifications to take the next educational level and increase their entrepreneurial and interpersonal skills. These strategies need to be implemented, apart from improving the quality of staff, but also to motivate staff to remain employed (Mwesigwa et al., 2020).

Conclusion

The research has explained the determining factors that influence the implementation of income-generation in Indonesian state universities with legal entities. Management qualification influences top management support. The training, workshops, and seminars that are joined by staff can support top management's decision-making related to income-generation policies. Management participation has an influence on top management support. The commitment and motivation of staff can support the top management in implementing income-generation. This study also demonstrates that management supervision and management participation have an influence on income-generation implementation. Management supervision and management participation have an indirect influence on top management support. Monitoring and controlling every activity that generates income is proven to affect income-generation in each department and unit. Management participation in the form of active contributions of thoughts and energy can increase income-generation. However, the management qualification does not direct and direct influence the implementation of income-generation. Top management should allow staff to develop their skills. The main goal is to boost their capabilities in managing income-generation, including having interpersonal skills, academic qualifications, entrepreneurial skills, capital, and time to start and run income-generation projects and activities.

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