



## WORKING MOTHERS' SOCIAL-ECONOMIC FACTORS AND PERCEPTIONS OF CHILDCARE SERVICE QUALITY IN DAR ES SALAAM, TANZANIA

Mary Asheri<sup>1</sup>,

Daphina L. Mabagala<sup>2i</sup>

<sup>1</sup>Assistant Lecturer,  
National Institute of Transport,  
Tanzania

<sup>2</sup>Lecturer,  
The Open University of Tanzania,  
P.O. Box 23409, Dar es Salaam,  
Tanzania

### Abstract:

This study aimed to examine how social-economic factors influence working mothers' perception of the quality of childcare service quality in Dar es Salaam, Tanzania. The study employed a cross-sectional research design to collect data from 411 working mothers with children aged 2-5 years in childcare centres. Three hypotheses were tested based on research objectives, the proposed relationships showed significance at  $p < 0.05$ . Results show that working mothers' social economic factors (income and educational levels) influenced their perception of childcare service quality. Results also indicated that working mothers with children aged 5 years were more satisfied with the service quality provided to their children than working mothers with children of 3-4 years. These findings suggest that income, educational levels, and a child's age are important factors that influence parents' perceptions of childcare service quality. The study highlights the need for tailored childcare services that cater to the needs of different age groups and the importance of increasing access to high-quality childcare services for families of all income and education levels.

**Keywords:** social-economic factors, working mothers' perception, quality in childcare centres

### 1. Introduction

The need for universal development and integrated programmes that meet the child's developmental needs is prized all over the world. United Nations Convention on Rights

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<sup>i</sup> Correspondence: email [wandeta2003@yahoo.co.uk](mailto:wandeta2003@yahoo.co.uk), [daphina.mabagala@out.ac.tz](mailto:daphina.mabagala@out.ac.tz)

of the Child (UNCRC, 1989), African Charter on the Rights of Children and Organization of African Unity (OAU, 1990), have recognized the rights of every child to education. The provisions of early childhood programmes are therefore vital, as discussed in the World Declaration on the Education for All (EFA), Jomtien (1990), and in Dakar conference (2000). According to UNESCO (2021) investing in Early Childhood Development Education (ECDE) is critically important for improving child development, survival, growth and future learning potential. As a result of great societal changes, there has been a great need to prioritize early childhood education and care (Elango, *et al.*, 2015). Single parenthood, employment of women and the shift from the traditional system of childcare are some of the reasons for the increasing demand for childcare. From 1990 to date the number of children enrolling on ECDE programs has risen significantly (UNESCO, 2022).

According to Masago and Kweingoti (2018), though there have been great efforts to boost the childcare sector in East Africa, the region has not fared any better in the provision of quality childcare service. A large number of childcare services in the region are in deplorable conditions characterized by low caregiver motivation, trained caregiver shortages, inadequate teaching and learning materials, and poor physical facilities. Studies conducted in Tanzania by Mghase and William (2016), Shemahonge (2018) revealed an unsatisfactory quality of pre-primary education. Mollel (2010) study on childcare, revealed inadequate and inequitable provision of services that later affected the welfare of children. Kita and Kapinga (2015) assert that the quality of childcare programs should have a conducive environment that provides appropriate experience to the children aimed at enhancing their learning and well-being. Despite the existence of reviewed literature, little attention has been given to studies predetermined on working mothers' perception of the quality of childcare services in relation to socio-economic characteristics such as mothers' education levels, income levels; and child's age. The study at hand intended to investigate how working mothers' perception of childcare service quality is influenced by socio-economic characteristics such as mothers' education levels, and income levels. The study also established how the age of the child influenced working mothers' perception of the quality of childcare services.

## 2. Literature Review

### 2.1 Working Mothers' Perceptions of Childcare Services

Working mothers' perception of service quality becomes a critical issue as it drives their involvement in school activities (Ang & Tabu, 2018). Working mothers' perceptions are influenced by the experiences they encounter in centres. Their involvement will notify them of whether the centre has met their expectation and needs as well as benefiting their children's needs.

The satisfaction of mothers with the quality of childcare services is the most efficient and effective communication because consumers who are satisfied are likely to disseminate positive experiences about the product or service to others while the dissatisfied ones will spread their negative experiences. Hill and Alexander (2017)

pointed out that, customer dissatisfaction (negative perceptions) is more pronounced than customer satisfaction (positive perceptions).

Working mothers' perceptions of childcare services vary according to needs, socio-economic factors, and convenience (Libent, 2015; Ling *et al.*, 2019). Childcare preferences differ by a number of children, parents, family, and community characteristics; whereas parents of infants and toddlers tend to prefer parental/relative care, parents of pre-schoolers tend to prefer centre-based care (Coley *et al.*, 2016; Rose & Elicker, 2008). Studies have found that parents who are working and particularly working full time are more likely to cite practical considerations than parents who are working part-time (Radjabovna, 2019; Sultana & Noor, 2012). Perceptions are always considered in relation to expectations (Zeithmal *et al.*, 2018). Due to expectations being dynamic, the evaluation may also shift from time to time (Haihambo, 2018).

Working mothers may have different expectations regarding childcare services based on the developmental stage of the child and changes in needs. Omar, *et al.* (2010) submit that the choice of childcare is in the hands of the customers (working mothers). Therefore, it is crucial to understand working mothers' perceptions towards childcare services. By understanding working mothers' perceptions towards childcare services, can contribute to the development of more effective and responsive childcare services that meet the needs of both mothers and children.

## **2.2 Socio-economic Factors and Working Mothers' Perception of Childcare Services**

Socio-economic factors of customers have been shown to influence the overall customers' perception of the quality of childcare services. Studies have shown that mothers' socio-economic status, education level, and income can impact their perceptions of the quality of care their children receive.

### **2.2.1 Income Level and Perception of Quality of Childcare Services**

Working mothers' perception of childcare services provided to their children has been shown to vary with parents' income levels. Studies indicate that income level becomes an essential factor for working mothers when choosing a care centre for their children due to the involvement of financial contribution towards a centre (Chavalier *et al.*, 2013). A study conducted by Torquati *et al.* (2011) on childcare quality and parental perception in USA revealed that family income was a significant predictor of childcare service quality. Similarly, a study by Omondi (2013) on parent satisfaction with the quality of pre-primary education in Kenya observed that high income provides parents with the ability to enroll their children in the pre-primary school of their choice that is believed to provide quality service.

Consistent with previous research Wamaitha (2017) who examined determinants of parent satisfaction with the quality of services in Makadara county reported that parents' who earned high incomes were more satisfied with the quality of services provided as they were able to enroll their children in pre-primary schools they viewed provided high-quality services. On the contrary, other studies indicated that family

income affected the provision of quality and relevant pre-primary education. A study conducted by Wawire (2006) showed that parents' income was one of the factors that affected access to relevant and quality early childhood education in Machakos and Nairobi Districts. Overall, research suggests that a mother's income can significantly impact her perception of the quality of childcare services. Mothers with higher incomes tend to have higher expectations for the quality of care their children receive and may be more critical of providers who do not meet those expectations.

### **2.2.2 Parents' Education Level and Perception of Quality of Childcare Services**

Working mothers' level of education has been reported to influence their perceptions of the quality of schools. Working mothers have different educational beliefs and perceptions which influence the choice of their children's centres. Working mothers' professional status is related to the selection of a school for their children (Yaacob, *et al.*, 2015). Highly educated working mothers might perceive quality childcare differently as compared to less educated because of the expectations associated with their careers i.e. traveling and long work hours (Chevarier *et al.*, 2013). Based on childcare preferences, most of them consider practical considerations such as location and convenience than quality issues Ang and Tabu (2018) found that education has a positive and significant relationship with economic growth.

Additionally, studies carried out by Libent-Mabagala and Begi (2020), and Wamaitha (2017) indicated that parents who had high education levels were more likely to be satisfied with the quality of services provided in pre-primary schools than parents who had a low level of education. Similar findings were also reported by a study by Badri *et al.*, (2011) showed that parents' education, was a significant determinant of parents' satisfaction. Similarly, Barros *et al.*, (2015) indicated that parents' education could assist parents in selecting quality childcare programs.

Torquati, *et al.* (2011) studied the roles of family income; parents' education and parents perceived constraints on selecting childcare USA states. Participants were from poor, low-income and non- low-income families. The findings revealed that programs with more educated parents observed better quality though more educated parents tend to embrace lower perceptions of quality than parents with lower levels of education. Dasgupta (2009) did a study measuring the quality of healthcare services and education in Indonesia. In the study, perception data was used showing that parents with higher education levels were less likely to be satisfied compared to parents who had a lower level of education. However, even though the above study findings may suggest how parents' perceptions of and satisfaction with pre-primary education may vary with their educational levels, the studies were done in Asia with different parents' characteristics and hence may not be generalized to parents in Tanzania.

### **2.2.3 Child's Age and Parents' Perception of Quality of Childcare Services**

The age of the child receiving care has been identified as influential on mothers' decisions about childcare (Rose & Elicker, 2008). Children of different ages need different childcare

arrangements. Children under three years are more likely to need one-on-one care. Evidence exists that parents of infants and toddlers tend to prefer parental/relative care, whereas parents of pre-schoolers tend to prefer centre-based care (Ang & Tabu, 2018). Parents prefer in-home/relative care for infants and centre based for older children, probably because of parental perceptions of differing developmental needs (Rose & Elicker, 2008). Mothers with fewer healthy children find it easier to juggle the elements of childcare than mothers with several children born closer or mothers with infants (Mohsin *et al.*, 2019).

Studies have been conducted on the factors that influence parents' satisfaction with childcare services. Jang *et al.* (2014) found that parents of three-year-olds rated program and teacher characteristics more favorably than parents of five-year-olds. Similarly, Keiningham *et al.* (2006) found that the satisfaction of working mothers positively impacted childcare service retention for parents of very young children (1 year of age). Therefore, a child's age can be a significant factor that influences parents' perception of the quality of care in child care services.

## 2.4 Conceptual Framework

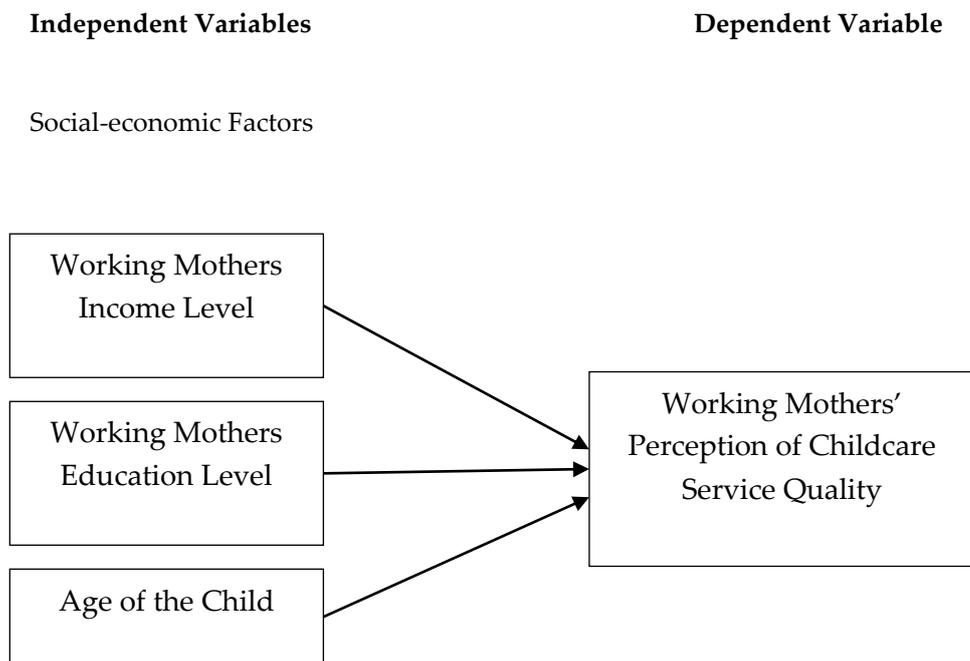
The conceptual framework of the study indicates working mothers' perceptions of service quality as a dependent variable which is influenced by mothers' social-economic factors (education level and income level); and children's age. Figure 1 depicts the influence of socioeconomic characteristics on working mothers' perceptions of childcare service quality.

The following null hypotheses were tested at a significance level of 0.05:

**H<sub>1</sub>:** There is no significant difference in perceptions of childcare service quality across various levels of working mothers' income.

**H<sub>2</sub>:** There is no significant difference in perceptions of childcare service quality across various levels of working mothers' education.

**H<sub>3</sub>:** There is no significant difference of working mothers' perception on childcare service quality by child's age.



**Figure 1:** Conceptual Framework

### 3. Material and Methods

The study used a questionnaire survey to collect information from working mothers. The questionnaire was developed from the SERVQUAL model, developed by Parasuraman *et al.*, (1988). The quantitative analysis was conducted using the statistical analysis known as PLS-SEM. The partial least squares structural equation modeling (PLS-SEM) approach was used to evaluate the measurement model of working mothers' perceptions of the quality of childcare services latent construct due to its superiority in handling reflective and formative models compared to covariance-based structural equation modeling. Also, PLS-SEM is a nonparametric method with no data distributional assumption. Therefore, bootstrapping was employed to determine standard errors of the coefficient estimate to evaluate the coefficient's statistical significance without relying on a distributional assumption (Hair *et al.*, 2017). The repeated indicators approach is considered more powerful than alternative approaches such as the two-stage approach and hybrid approaches when the number of items of the first-order constructs is unequal (Becker, *et al.*, 2012).

### 4. Results and Discussion

#### 4.1 Demographic Characteristics of Respondents

Analysis of the sample based on the distribution of respondents by the level of education indicated that about half of the respondents had degrees and postgraduate education levels. Followed by diploma holders, certificate holders, and secondary education

holders. Only a minority of respondents were having primary education (4.1%). The sample data indicated that most (95.9%) of the working mothers in Ilala municipality were secondary education holders. As regards working mothers' number of children, the analysis of the sample indicates the dominance of mothers with one to three children (88.2%).

Regarding working mothers' distribution by income level per month, the sample indicated that the majority had an income of two million Tanzania Shillings (approximately \$850) and above (57.2%). The most characteristics of respondents' distribution by income level per month of the sample were relatively comparable in proportional, except for the level between Tanzania Shillings 2,000,001 and 2,500,000. The statistics justify the affordability of those working mothers to pay for childcare services.

## **4.2 Measurement Model Reliability**

### **4.2.1 Indicator Reliability**

In the current study, the scales were adapted from studies on service quality attributes in secondary education settings. The scales were not tested beforehand in the context of the childcare service quality environment, which means that some measurement indicators may not fit across all the contexts.

Thus, to minimize the errors in measurement models and enhance the precision and validity of the scales and exploratory power of the developed model, a conservative value of 0.70 was used as the threshold value (Riel *et al.*, 2017). Nonetheless, before removal, the potential relevance of indicators with loadings lower than 0.70 was meticulously investigated or removed. Indicator reliability was evaluated through factor loading estimates (Kock, 2015). As factor loading estimates were standardized in PLS-SEM, the squared factor loading estimate equals the estimated indicator reliability (Ringle *et al.*, 2015). Based on the 0.700 rule of thumb for the removal of reflective indicators Riel *et al.*, (2017), Ringle and Sarstedt (2016) an iterative assessment of outer loadings was conducted using Smart PLS 3.2.8 software, and those items with the loading of less than 0.700 were removed in sequence after each run. Thereafter the remaining indicators were entered again and the same procedure was applied. This process was carried out iteratively until no indicator with loading below 0.7 was found. The indicators retained are listed in Table 1. Moreover, In Table 1, column 4, all weight and composite loading estimates show the expected sign and are significant at a 5% significance level.

### **4.2.2 Composite Reliability**

Composite Reliability (CR) was evaluated to assess the Latent construct indicators' internal consistency reliability (Henseler, 2018, Ringle *et al.*, 2015). CR indicated how well constructs in the measurement model are described by the items. Hair, *et al.*, (2013), and Ringle *et al.* (2018) suggest a cut-off of 0,7 and that all measurement latent constructs CR values in the model are above 0.70, this number was considered well described by the items.

### 4.2.3 Results from Collinearity Test

To ensure that multicollinearity did not pose a problem to the current study results, the PLS-SEM algorithm was conducted. To ensure the absence of multicollinearity, some scholars (Hair *et al.*, 2017; Wong, 2013) suggest VIF is not more than 5.

As measurement models are typically estimated by Mode B (regression weights) in PLS-SEM, collinearity among items forming an emergent variable was investigated employing the variance inflation factor (VIF), as high multicollinearity causes insignificant estimates and unexpected signs of the weights. Table 1 shows that the VIF values for the indicators of the composite models range from 1.2 to 2.18, suggesting that multicollinearity is not an issue in our empirical data.

### 4.2.4 Convergent Validity

The convergent validity of measurement models was evaluated based on the average variance extracted (AVE) (Hair, *et al.*, 2014) (see Table, column 7). The AVE values produced by Smart PLS 3.2.8 software were well above (range from 0.58 to 0.62) the required minimum level of 0.5 (Hair, *et al.*, 2015, Henseler *et al.*, 2016). Hence, the measures of reflective constructs have high levels of convergent validity. When the AVE is greater than .50 (Henseler & Sarsledt, 2013), the variance shared with a construct, and its measures are greater than the error. This level was achieved for all model constructs (see Table 1). Therefore, all the loadings can be accepted.

**Table 1:** Measurement Model Assessment

Indicator Code	Construct. Items	Outer loadings	Weights	Cronbach alpha	Composite reliability	AVE	VIF
INC	Income level	0.77*	0.33*	0.77	0.85	0.59	1.49
INC		0.74*	0.28*				1.51
INC		0.77*	0.35*				1.45
INC		0.79*	0.34*				1.57
ELC	Education level	0.82*	0.30*	0.83	0.88	0.60	1.80
ELC		0.76*	0.26*				1.77
ELC		0.77*	0.25*				2.02
ELC		0.73*	0.24*				1.73
ELC		0.78*	0.25*				2.07
EOC	Age of child	0.77*	0.28*	0.82	0.88	0.58	1.62
EOC		0.77*	0.28*				1.64
EOC		0.78*	0.28*				1.83
EOC		0.72*	0.22*				1.59
EOC		0.77*	0.25*				1.83

Note: \*p < 0.05.

### 4.2.5 Discriminant Validity

Discriminant validity entails that two latent variables that are meant to represent two different theoretical concepts are statistically sufficiently different (Hamid *et al.*, 2017, Hair *et al.*, 2013). To obtain empirical evidence for discriminant validity, the Fornell-Larcker criterion, and HTMT criterion were measured.

#### 4.2.6 Fornell-Larcker Criterion

The second procedure to determine the discriminant validity was the Fornell-Larcker criterion, in which the square root of AVE of each of the Latent Constructs must be higher than its correlation with other latent constructs (Hair *et al.*, 2017). Employing this procedure, the researcher has confirmed that the square root of AVE of the latent construct was higher than its correlation with other latent constructs as demonstrated in Table 2.

It was at a satisfactory level because the square root of the AVE from the constructs (0.759, 0.766, 0.771, 0.765, and 0.830) was greater than the correlation shared between the latent construct and other latent constructs in the model (See Table 2).

**Table 2:** Discriminant Validity According to the Fornell-Larcker Criterion

	Latent constructs	1	2	3	4	5	6	7	8
1	Assurance	<b>0.759</b>							
2	Age of child	0.581	<b>0.766</b>						
3	Education level	0.401	0.467	<b>0.771</b>					
4	Empathy	0.531	0.517	0.489	<b>0.765</b>				
5	Reliability	0.112	0.082	0.118	0.157	<b>0.830</b>			
6	Responsiveness	0.478	0.459	0.405	0.602	0.064	<b>0.790</b>		
7	Service Quality	0.311	0.398	0.644	0.436	0.121	0.344	<b>0.764</b>	
8	Income level	0.460	0.525	0.571	0.471	0.095	0.448	0.503	<b>0.779</b>

**Note:** The diagonal elements (in bold) are the square root of the AVEs; non-diagonal elements are latent construct correlations.

#### 4.2.7 HTMT Criterion

Hair *et al.* (2017) have recommended the evaluation of the correlations heterotrait monotrait ratio (HTMT) to determine the discriminant validity in PLS-SEM. In this study researcher considered the HTMT, Henseller *et al.* (2015) suggested the HTMT should be lower than 0.90 (more lenient threshold) or significantly smaller than 1. Our result, the HTMT of all latent constructs' relationships, were below the recommended threshold of 0.90 (See Table 3). Moreover, the one-sided 95% percentile confidence interval of HTMT does not cover 1, that is, it is significantly different from 1. Hence, the researcher followed Hair *et al.* (2017) suggestion to test whether the HTMT is significantly smaller than 0.90.

As indicated in Table 3, all latent constructs in the estimated model fulfilled the condition of discriminant validity for the study PLS-SEM Model. Since none of the off-diagonal elements exceeded the respective diagonal element, discriminant validity was achieved. Latent constructs may be considered to have adequate discriminant validity if the square root of the AVE for each construct was greater than the correlation between the latent construct and any other latent construct in the model (Riel *et al.*, 2017).

**Table 3: HTMT Discriminant Validity**

	Latent construct	1	2	3	4	5	6	7	8
1	Age of child	0.83							
2	Education level	0.55	0.57						
3	Income level	0.82	0.73	0.65					
4	Service quality	0.41	0.49	0.77	0.58	0.13	0.4		

#### 4.2.8 Structural Model

After an assessment of the measurement models. This section now focuses on the results of the structural model assessment in six values that represents the underlying concept of the path model which includes: collinearity evaluation, coefficient of determination ( $R^2$  value), effect size  $f^2$ , blindfolding and predictive relevance  $Q^2$ , and structural model path coefficients.

#### 4.2.9 Collinearity Evaluation

Data was imported from IBM SPSS Statistics software to Smart PLS 3.2.8 run multiple regressions with a set of exogenous latent constructs as independent variables and any other latent construct endogenous as the dependent variable (Ringle *et al.*, 2016). High correlations are normally not anticipated between the items of formative measurement models. The high correlations of formative indicators are considered problematic (Henseler, 2017). The researcher examined the collinearity.

The results for evaluating collinearity issues were the variance inflated factor (VIF) values. The following sets of predictor constructs for collinearity were assessed: (i) age of the child, working mother education level, and working mother income level as predictors of working mother perception of childcare service quality; (ii) childcare service quality. The results of this test were shown in the table representing all the VIF values and mean VIF values were below the suggested threshold levels (lower than 3.5) (Hair *et al.*, 2017, Henseler *et al.*, 2015) and therefore collinearity among the exogenous latent constructs was not a problem in the structural model.

#### 4.2.10 Coefficient of Determination ( $R^2$ )

The results of the PLS-SEM algorithm are shown in Table 4 and show that the  $R^2$  values for all endogenous latent constructs were significant ( $p < 0.05$ ). Table 4 indicates that the exploratory power of the structural model was statistically significant. Hair *et al.* (2017) recommended that the  $R^2$  value should be more than 0.1 as a rule of thumb. All the  $R^2$  values in this structural model were above 10% indicating that 10% or more of variance in endogenous variables was accounted for by the exogenous variables. These results suggest that all the hypothesized relationships in the model were informative. The R squares were 0.234, 0.415, and 0.306 which suggest that the model variables can explain 23.4%, 41.5%, and 30.6% for the age of the child, working mother education level, and working mother income level respectively.

**Table 4:** Results of PLS Bootstrapping for the Significance of R<sup>2</sup>

Endogenous Constructs	R Square	R Square Adjusted	Significance Level	Confidence Interval Bias Corrected	
				2.50%	97.50%
Age of child	0.234	0.23	0.002	0.117	0.393
Education level	0.415	0.413	0.000	0.254	0.596
Income level	0.306	0.297	0.000	0.135	0.431

#### 4.2.11 Effect Size f<sup>2</sup>

The result of the PLS-SEM algorithm for the significance of  $f^2$  demonstrates that of the 3 predictors of service quality (QUAL), the effect size of the age of the child (0.935) was much higher than the other predictors. The effect size of education level and income level on service quality (QUAL) was small and significant. The results in Table 5 show that the effect size of the age of the child on service quality (0.935) was much overall higher than the other exogenous latent constructs.

**Table 5:** Results of Effect Size (f<sup>2</sup>) Analysis

Endogenous Latent Construct	Exogenous Latent Constructs	f <sup>2</sup>	P-Value	Inference
Age of child	Service quality	0.935	0.022	Large effect
Education level	Service quality	0.052	0.04	Large effect
Income level	Service quality	0.055	0.03	Small effect

#### 4.2.12 Blindfolding and Predictive Relevance Q<sup>2</sup>

According to Hair *et al.* (2015) for predictive relevance, the predictive sample reuse technique (Q<sup>2</sup>) can be used as a criterion. The Q<sup>2</sup> evaluates the predictive validity through the blindfolding procedure in which data was omitted for a given block of indicators and then the omitted part was predicted based on the calculated parameters. Therefore, Q<sup>2</sup> depicted how well the empirically collected data could be reconstructed with the help of the model and the parameters of PLS-SEM (Hair *et al.*, 2017). Hair *et al.* (2017) and Ringle *et al.* (2017) suggested that the model has predictive relevance when Q<sup>2</sup> is greater than 0 whereas the model lacked predictive relevance when Q<sup>2</sup> was less than 0.

The results in Table 6 demonstrated the Q<sup>2</sup> values (along with the R<sup>2</sup> values) of all the endogenous latent constructs. All the Q<sup>2</sup> values were above zero and therefore supported the models in the sample have predictive relevance regarding the endogenous latent constructs.

**Table 6:** Results of Predictive Relevance (Q<sup>2</sup>)

Endogenous latent Construct	Q <sup>2</sup>	Inference
Age of child	0.171	Predictive relevance
Education level	0.244	Predictive relevance
Income level	0.125	Predictive relevance

### 4.2.13 Structural Model Path Coefficients Its Significance and Relevance of Latent Constructs

The purpose of this section was to describe the Structural Equation Modeling (SEM) techniques used to test the study's hypotheses and to report the results of the hypotheses tests. The significance of the weight of each latent construct revealed the relative importance and the loading represented the absolute importance that is determined using bootstrapping.

The validity of the structural model was confirmed, and the next step was to evaluate the path of the proposed structural model. Exhibits the second repeated indicators structural model and the analytical results are depicted. Each path corresponds to each proposed hypothesis in this study. The test of each hypothesis was achieved by looking at the sign, size, and statistical significance of the path coefficient (b) between the exogenous latent construct and its endogenous latent constructs. Hence, the hypothesized relationships were examined against various coefficients and scores obtained from the analysis. In this study the hypotheses were tested based on the direction, the strength of the standardized paths beta coefficient ( $\beta$ ), the T-statistic (t-value), the significance level (p-value), and Bias corrected confidence interval. The higher the path coefficient, the stronger the effect of latent constructs on the endogenous latent construct. Almost all the proposed relationships show significance at  $p < 0.05$ . The significance of the path coefficients was evaluated using the bootstrapping function of Smart PLS 3.2.8 with 500 sub-sample (the default value).

The hypotheses testing results are shown in Table 7.

**Table 7:** Structural Model Results for Main Relationships and Mediation Models

Hypothesis	Relationship	Path coefficient	t value	P values	Confidence Interval		Results
					Bias Corrected		
					2.5%(LB)	97.5%(UB)	
H <sub>1</sub>	Age of child vs service quality	0.697	19.143	0.000	0.601	0.753	Supported
H <sub>2</sub>	Education level vs service quality	0.271	3.842	0.000	0.123	0.393	Supported
H <sub>3</sub>	Income level vs service quality	0.196	3.679	0.000	0.086	0.306	Supported

### 4.2 Working Mothers' Perception of Childcare Service Quality by Income Levels

Working mothers' perception of childcare services varied based on income level leading to construct the first hypothesis (H<sub>1</sub>). The relationship between working mothers' income levels and working mothers' perception of childcare services was strong. Thus, when a unit's income level goes up, working mothers' perception of childcare services quality goes up by 0.300. Thus, the study findings show that a moderate level of working mother income would result in a moderate level of her perception of childcare service quality.

Thus, there is a significant difference in working mothers' perception of childcare service quality across various levels of working mothers' income.

Further, the study's findings show that there was a significant difference in working mothers' perception of service quality depending on their income level. The study findings suggest that high-income levels motivate working mothers to send their children to childcare centres of their choice, which are expected to provide quality service; hence, most of them tend to be satisfied with the service quality of childcare centres. The results concur with the findings of Jang *et al.* (2014) and Torquati *et al.* (2011). The findings are also in line with those of Suppramaniam *et al.* (2019), who point out that the relationship between school popularity and parents' income levels had a significant impact on private school selection. The findings are in line with Yaacob *et al.* (2015), who found that parents make decisions based on their income level and social background. Further, the findings of the study are in line with Wamaitha (2017) who found that parents' who earned high incomes were more satisfied with the quality of services provided as they were able to enroll their children in pre-primary schools, they viewed provided high-quality services to their children.

On the contrary, Omondi (2013) observed that parents with low incomes might be forced to stick to the pre-primary education that they can afford, although they are not satisfied with the quality of services provided by the same. The findings are however inconsistent with Al Jabery *et al.* (2014) whose study established no significant differences in parents' satisfaction and income level with education services provided across the various levels of education.

### **4.3 Working Mothers' Perception of Childcare Service Quality by Levels of Education**

Education level was found to have a significant and positive association with working mothers' perception of childcare service quality lending to construct the second hypothesis (H<sub>2</sub>). This means that when the level of education goes up by a unit, a working mother's perception of childcare services quality goes up by 0.040. Thus, the study findings show that a moderate level of education would result in a moderate level of working mothers' perception of childcare service quality. Therefore, the alternative hypothesis was rejected; hence, there is a significant difference in working mothers' perception of childcare service quality across various levels of working mothers' education.

The education level was positively associated with childcare service quality; thus, working mothers' education level becomes an important tool in developing working mothers' perception of childcare service quality. The findings show that there is a significant difference in working mothers' perception of childcare service quality based on working mothers' level of education. The mean score for the working mother with a postgraduate degree was higher than the mean score for primary education. The study findings confirmed the result of other studies that show that parents' education level does impact on parents' decision in selecting a school (Dasgupta, *et al.*, 2009). In addition, the study findings confirmed the probability of parents with a postgraduate degree being

satisfied with the quality of pre-primary education is higher as compared with the probability of parents with primary education being satisfied (Libent, 2015). This means that the higher the education level of a working mother, the higher her chances of being satisfied with the quality of the childcare centre.

The study's findings align with studies by Suppramaniam *et al.* (2019), who reported that the relationship between school popularity, parents' income levels, and parents' educational levels significantly impacted private school selection. The findings are also consistent with the results of the study by Libent (2015), which showed parents with higher educational level tend to enrol their children in private pre-primary schools, which was believed to have high quality. Further, the finding is in line with Wamaitha (2017) which showed that parents who had high education levels, were more likely to be satisfied with the quality of services provided in pre-primary schools than parents who had a low level of education.

However, the findings contradict those of Dasgupta, *et al.* (2009) and Torquati *et al.* (2011), which show that parents of lower educational levels tend to score the quality of their children's school higher than parents with high levels of education. Similar findings were reported by Radjabovna (2019) who showed that parents with higher education were not satisfied with the quality of education. The findings also contradict the results of the study conducted by Omondi (2013) also showed that parents with low education tend to rate the quality of Education provided to their children highly as compared to those with higher education.

#### **4.4 Working Mothers' Perception of Childcare Service Quality by Child's Age**

A child's age significantly affects the working mother's perception of childcare service quality, lending to construct with the third hypothesis (H<sub>3</sub>). The relationship between the age of the child and working mothers' perception of service quality was strong. This suggests that when the child's age goes down by a unit, working mother's perception of childcare services quality increases by 0.119. Thus, the alternative hypothesis is rejected; hence, there is a significant difference in working mothers' perception of childcare service quality by child's age. The study findings show that a moderate level of child age would result in a moderate level of childcare service quality.

The study finding is conformist to the literature of Jang *et al.* (2014), Mgata (2017) and Torquati *et al.* (2011), which reported the direct relationship between child's age and childcare service quality perception in the education sector. Jang *et al.* (2014) findings revealed that parents of three-and four-year-old children reported more satisfaction with childcare services. Keiningham *et al.* (2006) findings show that parents' satisfaction was most important in retaining children, especially when they were very young (up to one year). However, as the number of children increases, parents' satisfaction becomes increasingly less predictive of children's continued enrolment at childcare facilities. The study findings show that the combination of low-quality childcare and early (before age 1) childcare significantly increases the risk of problematic behaviour at the pre-school age.

## 5. Conclusion and Recommendations

Based on the findings of the study, the following conclusions were generated: Working mothers' income and education levels significantly predict their perception of childcare service quality. It was further concluded that the child's age is a significant predictor of working mothers' perception of childcare service quality. Therefore, it is recommended that the responsible Ministry for Health, Community Development, Gender, Elderly and Children should consider working mothers' perception in designing childcare policies and guidelines as it constitutes a very critical element for solving work-family challenges such as placing childcare services at workplaces. Additionally, since income and education levels have a significant impact on mothers' perception of childcare service quality, it is important to ensure that all families, regardless of income or education level, have access to high-quality childcare services. This can be achieved through various measures such as subsidies, grants, and partnerships with employers to provide affordable childcare options for working parents. Lastly, it is important for childcare providers to tailor their services to meet the needs of different age groups. For example, providers could offer age-appropriate activities and educational programs for toddlers and preschoolers.

### Conflict of Interest Statement

The authors declare no conflicts of interest.

### About the Authors

**Dr. Mary Asheri Mashoke** is a lecturer and an expert in Gender and Social Studies. She works with the National Institute of Transport combining teaching, research and consultancy roles. Her research interests are on Childcare service quality, Gender issues, Logistics & transport. She has specialized in childcare service quality and working mothers.

**Dr. Daphina Libent Mabagala** is a lecturer and expert in Early Childhood Studies. She works with the Open University of Tanzania combining teaching, research and consulting roles. Her research interests are on Early Childhood Education and Development, specifically on Quality issues in Early Childhood Education (Access, retention of children, teachers' practices, Parental involvement in children education) and community empowerment. Dr. Daphina maintains an Orcid profile (<https://orcid.org/0000-0001-6713-7106>) and a ResearchGate account, where her publications can be found. Information about her research, teaching and other activities are available on the Open University of Tanzania website [www.out.ac.tz](http://www.out.ac.tz).

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